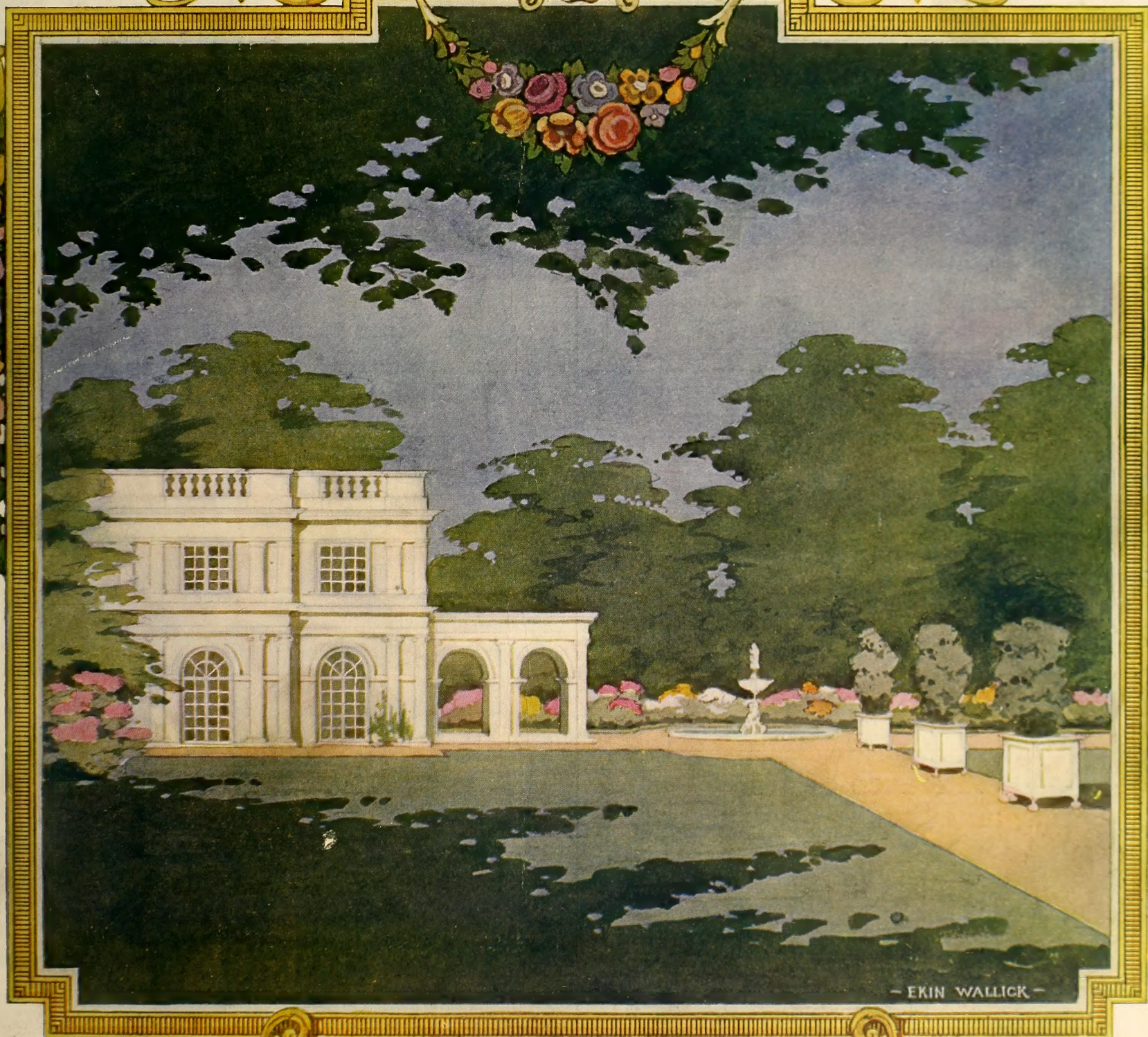


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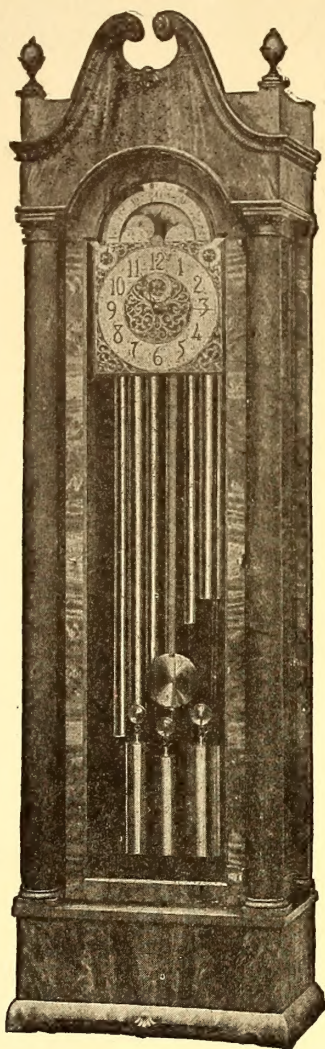
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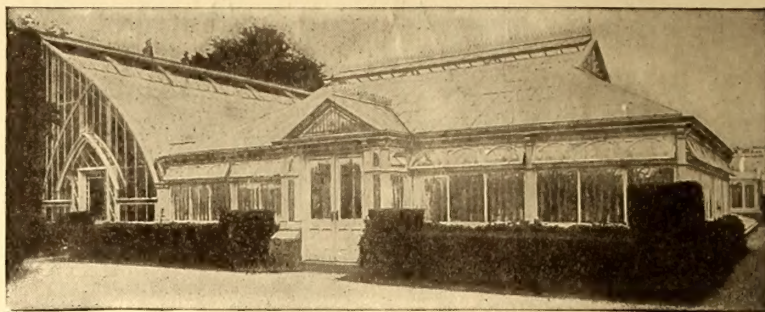
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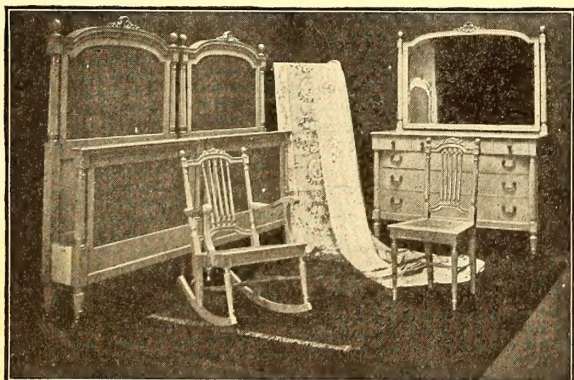
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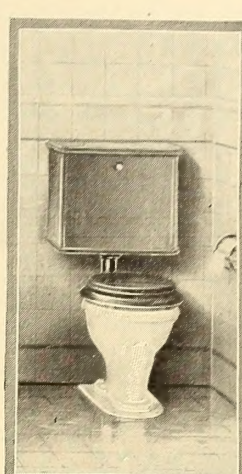
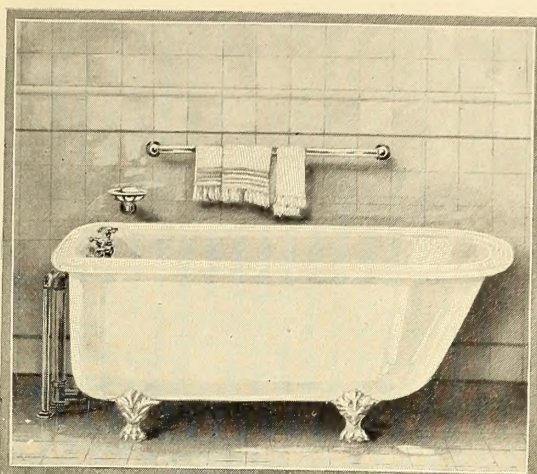
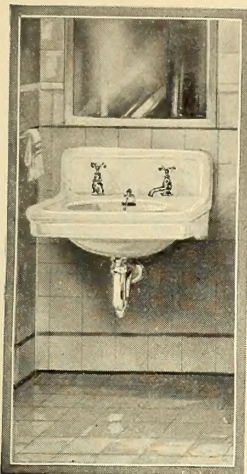
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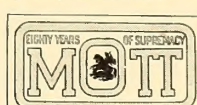
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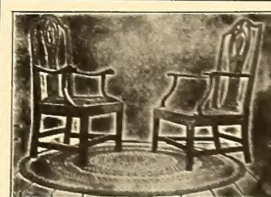
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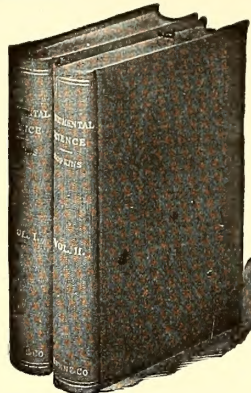
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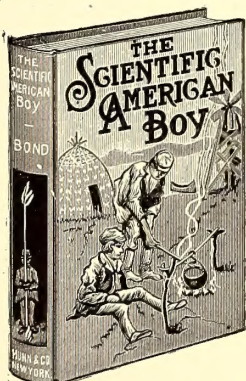
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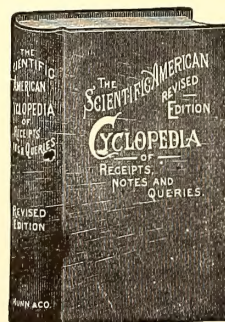
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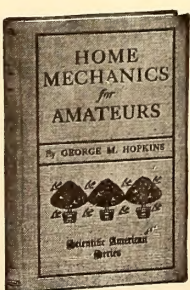


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Let us begin with the soil. Never plant when it is sticky. This will destroy the little fibrous roots with which the tree feeds, and if the tree is not entirely killed its development will be checked for months, if not years. Spread the roots out in loose, moist, but not wet dirt, and the growth will be immediate. In the second place never incorporate unfermented manure in the soil about the roots. It is a great mistake to suppose that a shovelful of manure in the hole will be of any benefit to the tree. It will always do harm, and generally will kill the tree. There are very few of our trees that will endure anything of the kind, even after they have started growth. You may spread manure as a mulch, but even there you must be cautious.

In the third place never leave the dirt loose, but compact it as tightly as possible around the roots. Tread it down, and pound it down, for you cannot get it too tight,—that is provided it is not wet and sticky. In the fourth place never fail to slightly mound up the dirt around your tree so as to run the water away from, rather than have it settle about the tree. This rule of course must be modified in a dry climate, and in sandy soil there is less danger. But if you plant your tree in the fall it is quite important not to have the water settle about it during the winter. After pounding the dirt down let the top dirt be loose. Top dress now with a mulch. This is exceedingly important with spring planting, as a few dry days will draw the moisture away from the fine roots, and the tree will be past recovering in a very short time. The best very common mulch is coal ashes. This is porous material, and will let the moisture in and hold it there; at the same time it never makes mud. During the summer, weeds, grass, and almost any waste material will serve for mulch.

Do not make the mistake of trying to drive your tree into rapid growth when young. As a rule small trees are whipped up with too much food, and old trees are starved altogether. Better feed your old trees liberally, and your young trees carefully. So when you plant your tree let it have only good vegetable mould, and if manure is used at all place it on the surface. This matter is extremely important; for stimulating is the ruin of young cherry trees and pear trees particularly. An apple tree that will give you three feet of wood in a season is growing fast enough. I sometimes have them pointed out as growing prosperously, because they give two or three times that wood. Sound wood will not be made with such rapidity, nor well-ripened wood, to resist the cold of winter. A pear tree should be simply kept growing; never allowed to stop; but never filled up with a lot of shoot that cannot ripen. On the contrary cut back at least one-third of the growth each year.

Tree planting of apples, pears and heavy trees of all sorts, can generally be accomplished better in the spring than in the fall. If planted in the fall they should be securely staked and tied, so that there will not be the slightest swaying of them in the wind, or bending with snow. Black raspberries, and as a rule stone fruits, had better be set in the spring. If the soil is not likely to be ready when spring shipments are received, they can be ordered in

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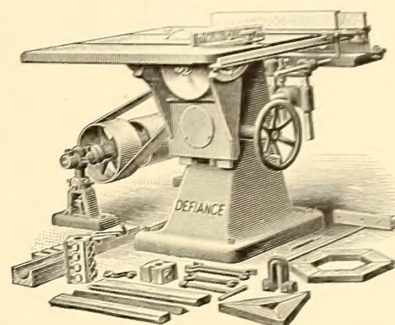
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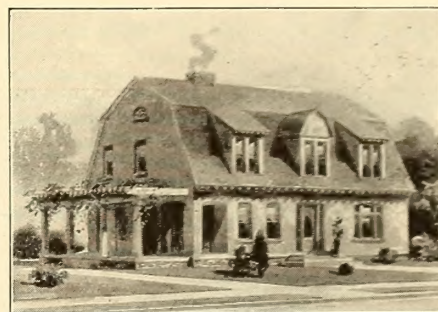
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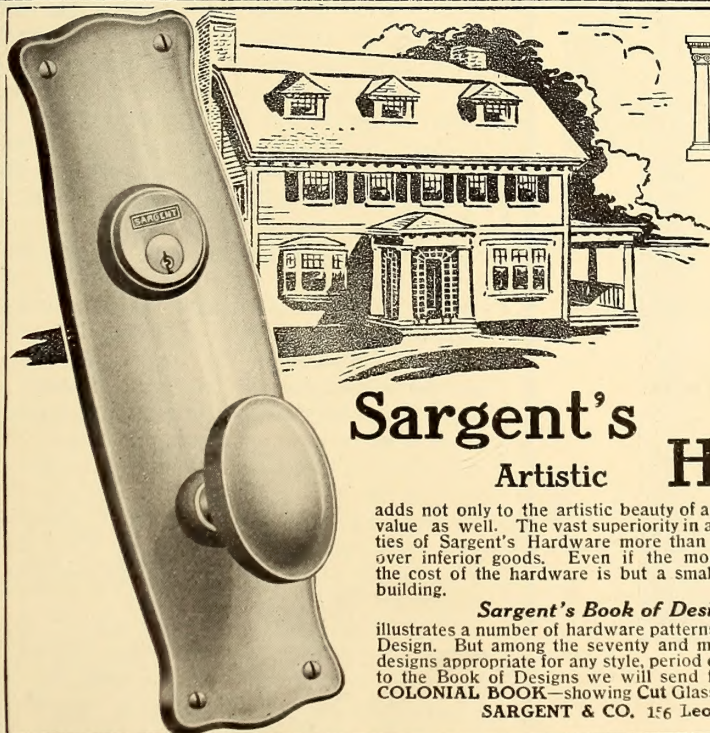
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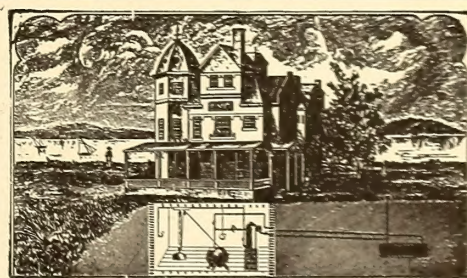
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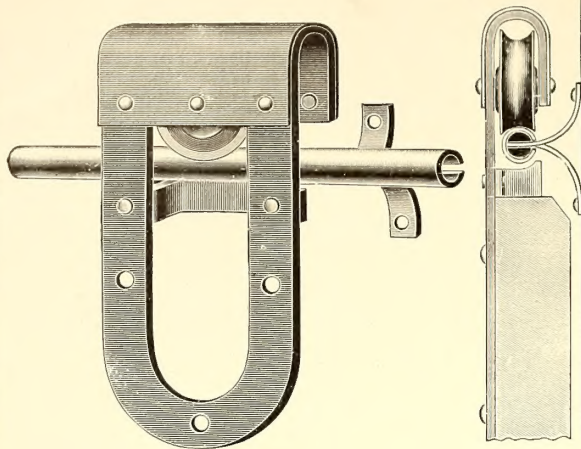
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Never plant anything but stocky trees; and after you have found a nurseryman who knows how to grow trees, tell him just what you want, and he will probably supply it. As a rule do not buy little trees, by mail. This might do with rare things, but it is nonsense with apples and pears. The little things are liable to damage in many ways, and must be cut sharply back, near the ground, to make new trunks. Whip stalks, either in fruit or shade trees, are of no value. It will take ten or fifteen years to make anything of them, unless you cut them sharp to the ground—just above the graft. As a rule also even stocky trees must be sharply pruned. The best way is to ask your nurseryman to do it for you, unless you are sure of your own skill. Peach trees should be cut to a clean pole, and all other fruit trees left with only very short spurs. Cut pear trees back to two or three feet, and apples to three or four.

The handling of evergreens is a matter by itself. The first rule is never to let the sun or the air touch the roots; keep them wet all the time, and thoroughly puddle them as soon as placed in the ground. Then mulch them very heavily, with anything at hand, old straw, or grass, or any waste material. If a dry spell occurs keep them soaked, for the first few weeks. In this way you can move a very large evergreen, but otherwise you will lose even small ones. Shear them into shape, and shear sharply, as soon as dug; but never cut a limb back of the needles or leaves. If you do, that limb is permanently ruined. Later trimming will work in the same way. Too much mulching cannot be done for an evergreen hedge, not for the first five years.

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A HANDBOOK OF HOSPITALITY FOR TOWN AND COUNTRY. By Florence Howe Hall. Boston: Dana, Estes & Co. Pp. 312.

Good breeding is one of the essentials of modern life. And it is one of the rarest. It is an art that is difficult to define, and difficult to practise without long training; but it is still eminently an essential. The author of this book covers a very wide field, as her title suggests; on the whole she covers it wisely and well, and her book should be welcomed by many people who, with the best intentions in the world, may not always know just how to behave or what to do under given conditions. Here, every thing is set down, catalogued, arranged, explained and illustrated. It is a book well worth making, and it has been well made, with skill, care, taste and knowledge.

In the sudden development of enormous wealth in our own country, writes the author in her instruction, there is some danger that we shall be dazzled by the pomp and display of the very rich and that we shall lose sight of the true nature of hospitality. It does not consist in gorgeous show and ceremony, although these may sometimes form its accompaniments. It consists in the sharing with our brother the enjoyment of our possessions, whether these are material or spiritual. The duty of hospitality is a part of the Christian duty of giving to others.

These are lofty principles, and a book written from this point of view cannot be otherwise than helpful and suggestive. An adhesion to its principles and a regard for the modes and methods it advocates will

add to the natural agreeableness of any hostess, and help the guest as well.

THE TRAINING OF FARMERS. By L. H. Bailey. New York: The Century Co. Pp. 263. Price, \$1.00 net.

If all the farmers everywhere were to read Prof. Bailey's books there would be a marvellous betterment in American agriculture, provided the ideas and principles he elucidates were put into practical operation. The present book, which appeared in whole or in part in the monthly columns of the Century Magazine, does not deal with agricultural methods, but with the education and training of farmers as farmers. This, it will at once be seen, is something very different from the schooling of farmers' sons, or of the farmers themselves if they neglected or had no opportunities in their youth.

It should be apparent that a book of this scope must be one that deals with a problem of first rate importance. Prof. Bailey approaches the subject with an open mind and with long experience. A wise man himself, and carefully trained, with many years spent in practical work, he is precisely the one to discuss the many weighty topics treated in this book in a sane and helpful way. It is a book alive with ideas, and a really notable contribution to the highly important topic of the relationship of education to farming.

THE BOY PIONEERS. SONS OF DANIEL BOONE. By D. C. Beard. New York: Charles Scribner's Sons. Pp. 329. Price, \$2.00 net.

Dan Beard is one of the men who never grow old. He has been writing and illustrating books for years and years, and this his latest, shows him as young and fresh as he ever was. It is a fine youthful subject he has, and this helps no doubt; but it needs enthusiasm to write engagingly for boys, and this fine quality Mr. Beard possesses in an eminent degree.

To a considerable extent this volume is a handbook for the Society of the Sons of Daniel Boone, an organization for boys invented and promoted by Mr. Beard. But it is pre-eminently a boys' book for boys, and one does not have to be a member of the author's thriving juvenile society to appreciate its many suggestions nor to be debarred from following out his ideas. It is a book of out-of-doors, too; of healthy normal boy life in the open, an active busy life in which boys live and work and do things. Mr. Beard tells them what to do and how to do it, and he illustrates his text with numerous drawings of his own that tell the stories quite as well as his own written words.

Here, then, is an outdoor book of the best kind for boys. There is lots of fun in it, plenty to do, ingenious suggestions and a multitude of helpful and delightful things in which boys may be depended upon to be interested. Mr. Beard writes with the experience, he tells us, of thirty years; as boys go nowadays he has long passed the boy age. But he has not lost his enthusiasm for boys; he loves them and understands them; and his work and his books are successful because of these basic facts.

IN A YORKSHIRE GARDEN. By Reginald Farrer. New York: Longmans Green & Co. Pp. 316.

This is a charming and delightful book; not at all a "garden" book as generally understood; but a book for the study; a book to read for the pleasure of reading; a book for a quiet hour. And when you have finished you have learned a lot; a lot

Continued on page xi.

Save Your Trees Start This Year I Want to Help You—Write Me



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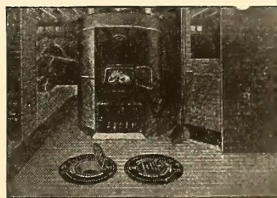
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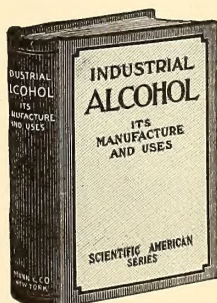
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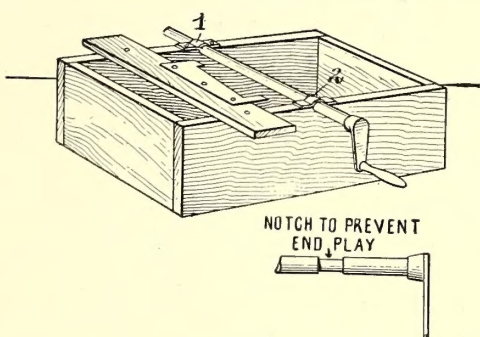
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THIS work should appeal strongly to all those interested in ornamental concrete, as the author has taken up and explained in detail in a most practical manner the various methods of casting concrete in ornamental shapes. The titles of the thirteen chapters which this book contains will give a general idea of the broad character of the work. They are entitled:

I., Making Wire Forms and Frames; II., Covering the Wire Frames and Modeling the Cement Mortar into Form; III., Plaster Molds for Simple Forms; IV., Plaster Molds for Objects Having Curved Outlines; V., Combination of Casting and Modeling—An Egyptian Vase; VI., Glue Molds; VII., Colored Cements and Methods Used for Producing Designs with Same; VIII., Selection of Aggregates; IX., Wooden Molds—Ornamental Flower Pots Modeled by Hand and Inlaid with Colored Tile; X., Concrete Pedestals; XI., Concrete Benches; XII., Concrete Fences; XIII., Miscellaneous, Including Tools, Waterproofing and Reinforcing.

The first two chapters explain a most unique and original method of working pottery which has been developed by the author. The chapter on color work alone is worth many times the cost of the book, inasmuch as there is little known on this subject, and there is a large and growing demand for this class of work. The author has taken for granted that the reader knows nothing whatever about the material and has explained each progressive step in the various operations

throughout in detail. These directions have been supplemented with half-tones and line illustrations which are so clear that no one can misunderstand them. The amateur craftsman who has been working in clay will especially appreciate the adaptability of concrete for pottery work, inasmuch as it is a cold process throughout, thus doing away with the necessity of kiln firing, which is necessary with the former material. The book is well gotten up, and is printed on heavy glazed paper and abounds in handsome illustrations throughout, which clearly show the unlimited possibilities of ornamentation in concrete.



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About a year ago it was decided to open a department in the *Scientific American* devoted to the interests of the handy man. There was an almost immediate response. Hundreds of valuable suggestions poured in from every part of this country and from abroad as well. Not only amateur mechanics, but professional men, as well, were eager to recount their experiences in emergencies and offer useful bits of information, ingenious ideas, wrinkles or "kinks" as they are called. Aside from these, many valuable contributions came from men in other walks of life—resourceful men, who showed their aptness at doing things about the house, in the garden, on the farm. The electrician and the man in the physics and chemical laboratory furnished another tributary to the flood of ideas. Automobiles, motor cycles, motor boats and the like frequently call for a display of ingenuity among a class of men who otherwise would never touch a tool. These also contributed a large share of suggestions that poured in upon us. It was apparent from the outset that the Handy Man's Workshop Department in the *Scientific American* would be utterly inadequate for so large a volume of material; but rather than reject any really useful ideas for lack of space, we have collected the worthier suggestions, which we present in the present volume. They have all been classified and arranged in nine chapters, under the following headings:

I., Fitting up a Workshop; II., Shop Kinks; III., The Soldering of Metals and the Preparation of Solders and Soldering Agents; IV., The Handy Man in the Factory; V., The Handy Man's Experimental Laboratory; VI., The Handy Man's Electrical Laboratory; VII., The Handy Man about the House; VIII., The Handy Sportsman; IX., Model Toy Flying Machines.

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Chapter I., Initiation; Chapter II., Building a Dam; Chapter III., The Skiff; Chapter IV., The Lake House; Chapter V., A Midnight Surprise; Chapter VI., The Modern Order of Ancient Engineers; Chapter VII., A "Pedal Paddle-Boat"; Chapter VIII., Surveying; Chapter IX., Sounding the Lake; Chapter X., Signaling Systems; Chapter XI., The Howe Truss Bridge; Chapter XII., The Seismograph; Chapter XIII., The Canal Lock; Chapter XIV., Hunting with a Camera; Chapter XV., The Gliding Machine; Chapter XVI., Camping Ideas; Chapter XVII., The Haunted House; Chapter XVIII., Sun-Dials and Clepsydras; Chapter XIX., The Fish-tail Boat; Chapter XX., Kite Photography; Chapter XXI., Water-Kites and Current Sailing; Chapter XXII., The Wooden Canoe; Chapter XXIII., The Bicycle Sled; Chapter XXIV., Magic; Chapter XXV., The Sailboat; Chapter XXVI., Water Sports, and Chapter XXVII., Geyser Fountain.

MUNN & COMPANY, Inc., Publishers, 361 Broadway, New York

Sand-Lime Bricks

By E. W. Smythe



HERE seems to be a general impression that sand-lime brick is a new and untried building material; scarcely out of the experimental stage. Although sand-lime brick can not boast of a pedigree traced to the time of the Pharaohs or the Tower of Babel, still it has been in use long enough to establish without doubt its quality as a first-class building material.

Sand-lime brick were first made in Potsdam, Germany, about 1820. Potsdam, situated in central Germany, is surrounded by a broad sandy plain; there being no clay or stone available for building purposes, sand and lime were made into mortar, molded into bricks and allowed to cure from three to four months in the open air. These bricks withstood all the required tests, and increased in hardness with age. The attention of Dr. Michaelis, of Berlin, in 1880 was attracted to this peculiar kind of brick, and after experimentation he discovered, that by subjecting the green brick to steam under pressure the brick after a few hours were rendered as hard as though they had been exposed to the atmosphere for many months. After the discovery made by Mr. Michaelis, the manufacture of sand-lime brick increased rapidly throughout Germany and many large plants for their production were erected.

In our own country the oldest sand-lime brick of which we have any record are those in the walls of a house in Mobile, Ala., built fifty years ago. As to whether these bricks were made in this country or elsewhere is not known, but at any rate they are in good condition and appear to have been made in a manner similar to those first made in Germany.

But not until 1901 were sand-lime brick manufactured in any considerable quantity in the United States; during this year two plants were in operation. In 1903 there were 16 plants; in 1904, 57, and in 1905, 130. At present there are probably about 200 plants. Among these plants there is a great diversity in the manner of handling and combining their materials. These differences occur from local conditions and the way in which they hydrate the lime and the manner of incorporating the lime with the sand.

In a general way, I shall now describe the process of manufacturing sand-lime brick as carried on by the plant in this city, and then refer briefly to some of the methods used by other manufacturers.

The sand as it is brought in dump cars from the bank is shoveled into an elevator boot from which it is elevated about 35 feet, and discharged upon a vibrating screen. Here it is run through a $\frac{1}{4}$ -inch mesh screen and falls into a conveyor over the numerous coils of a steam drier. The sand must be perfectly dry. There can be no half-way place in regard to the dryness of the sand, for you cannot mix sand and lime intimately unless both are thoroughly dry. The wet sand as it rests upon the pipes dries and runs down into a hopper-shaped bin in the bottom of which is a conveyor for drawing the sand out as it is needed.

The lime is slacked in water-tight steel boxes mounted on wheels. Each of these has a capacity of about 450 pounds of dry slacked lime, a quantity sufficient for one thousand brick. The quicklime is weighed out, placed in the boxes and the proper quantity of water added to it. To determine the correct amount of water to apply to the lime

in order that a dry slack may be secured, is not always easy, as the lime when received at the factory is nearly always more or less air-slacked, and also there is considerable variation in the quality of lime even when the limestone comes from the same ledge. After applying the water the lime cars are run under the brick cars in the same cylinder in which the bricks are hardened, and the slacking is thus completed, and the surplus of moisture (if not too great) dried out. The dry slacked lime is now dumped from the cars upon a "grizzly" which takes out all the large cores. Passing through the "grizzly," the lime descends into a hopper and is conveyed to an elevator which discharges it into a bolting machine where all the small cores are extracted. Leaving the bolting machine the lime falls into a bin directly opposite the bin containing the dry sand.

Between the lime and sand bins is a measuring device, and the dry sand and lime are brought to it by conveyors placed in the bottoms of their respective bins. The right proportions being measured out, the mixture is allowed to fall into a preliminary mixer where for two or three minutes the sand and lime receive their first mixing. Passing on from this mixer the sand and lime are fed by a conveyor into a tubemill where they are thoroughly ground and mixed, and each grain of sand is completely coated with minute lime particles. Leaving the tubemill the mix is at once elevated to a pugmill where just sufficient water is added to cause it to cling together when compressed tightly in the hand. The pugmill discharges the dampened material into a 4-mold press. The green bricks are loaded upon cars, 1,000 to a car, and run into a large steel cylinder 50 feet long by 6 feet in diameter. After filling the cylinder (which holds a day's run) live steam is turned into it. About two hours are required to bring the steam pressure up to 120 pounds per square inch, which pressure is maintained for eight hours. After steaming, the brick are ready for market. Twenty-four hours have elapsed since the sand left the bank until it leaves the cylinder a finished brick ready to lay in the wall. In several instances we have afforded masons the unusual pleasure of laying hot brick on a cold morning.

In the process of manufacture just described the lime was slacked before incorporation with the sand, but in some processes the quicklime is ground, then mixed with the sand and passed through a tube or ballmill. After grinding, the proper amount of water is added, and the mixture is conveyed to a silo where it is permitted to slack and cure for 24 or 48 hours. It is then withdrawn and made into brick. Others grind but a part of their sand and lime, and some do no grinding whatever. There are some factories which use the damp sand directly as it comes from the bank; to this damp sand damp slacked lime is added. The two are run through a short pugmill, then to the press and made into brick. The process is beautiful for its simplicity, but the product is not a credit to the sand-lime industry.

The materials entering into the manufacture of sand-lime brick are as common as those entering into the production of clay brick, but as all clays are not suitable for making good clay brick so all sands are not suitable for making good sand-lime brick. The sand must be clean and contain a high per cent of silica. Of all the impurities in sand, clay,

Continued on page xii.



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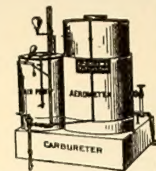
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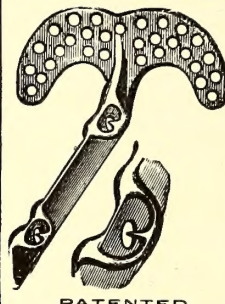
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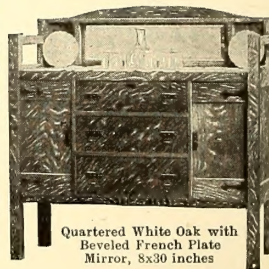
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CONTENTS FOR JANUARY, 1910

	PAGE
THE IMPOSING ENTRANCE PORCH AND FACADE TO THE RESIDENCE OF HENRY W. SCHULTZ, Kenilworth, Ill.	2
MONTHLY COMMENT—The Unusual House.	4
NOTABLE AMERICAN HOMES—"Eirianva," the Tuxedo Home of the Rev. Canon George William Douglas, D.D.	5
NEW PROCESS FOR DAMASCENING, INLAYING AND BLENDING METALS.	
By Amos Bradley Simpson	11
THE JAPANESE PERSIMMON.	13
By E. P. Powell	
AMERICAN HOMES AND GARDENS GARDEN COMPETITION. The Second Garden Prize of Fifty Dollars Won by Charles D. Davies, Englewood, New Jersey.	14
SOME EASTERN HOMES—Costing from Seven to Eight Thousand Dollars.	
By Francis Durando Nichols	18
MARINE MOSAIC.	23
By W. Cole Brigham	
A COLONIAL HOUSE—The Residence of L. F. Rhoades, Esq., at Nutley, New Jersey.	
By Robert Prescott	26
THE QUEBRACHO TREE OF SOUTH AMERICA.	28
FURNISHING THE FLAT—I. The Hall.	29
By Lilie Hamilton French	
FLOWERS ALL THE YEAR ROUND.	32
By S. Leonard Bastin	
AN ELECTRICAL HOUSEHOLD.	34
By Jacques Boyer	
THE RESIDENCE OF HENRY W. SCHULTZ, at Kenilworth, Illinois.	36
By Henry Hawley	
"LOW GABLES"—A Summer Home at Sound Beach, Connecticut.	40
By Burr Bartram	

A Talk About Pruning Trees

Sand Lime Bricks

Automobiles and Roads in France

Garden Notes

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The imposing entrance porch and facade to the residence of Henry W. Schultz, Kenilworth, Illinois

AMERICAN HOMES AND GARDENS



Volume VII

January, 1910

Number 1



"Eirianva:" The honeysuckle archway to the Pleasaunce

Monthly Comment

The Unusual House



N A general way and as a matter of good taste, the unusual house is a very safe kind of a house to avoid. The bizarre and the grotesque, the odd and the strange, yes, even the unique, are but so many manifestations of the unusual, and hence dangerous things in art, and particularly dangerous in objects so large and permanent as buildings. This, however, does not mean that it is best to keep to the hackneyed, to keep to the academic, or remain satisfied with the commonplace. All these things are dreadful enough; but it does mean that the house which has no other claim for consideration than that it is "unusual" is a very good thing to avoid.

THERE are many conventions in building which are absolutely unavoidable and particularly in domestic building. There are combinations which cannot be dispensed with. A house wall is, at the most, a surface broken by openings which are doors and windows. This is the basic form of all exterior design. The wall surface may be of various materials and of quite limitless variety of color; it may be plain or ornamented; the windows may be spaced singly or combined; the doors may be single or double, grouped or apart; they may fill the centre of a row of windows or stand to one side. The possible combination of the essential parts is really most limited.

YET few houses look alike, unless designedly made duplicates of each other. Their very variableness gives a pleasant variety to what otherwise might be deadly dullness. And this variety is, of course, directly due to the skill with which the designer molds and colors his building, decorates his walls and parts, varies their dimensions, accomplishes his whole. There is nothing that need be unusual in any of these operations, nothing that need be unusual in the results. It is the common daily practice in every architect's office, and it is exactly the mode which is followed in the production of any house design.

BUT let it be imagined that the designer wearies of the good old standards; what follows? He casts about for an "unusual" idea to introduce into his design. Profound thought develops an arch of a form hitherto unknown to man. Deep thinking leads to the evolution of a chimney so utterly new that the fire hearth might have been forgotten in contemplating its outline. A dream vagary is given visible form and all the world is called upon to admire it. And the net result is that the occupant of the house becomes known throughout his community as the "man who lives in the queer place over the hill." This, of course, is not an end sought by good building or by good architecture. But it expresses quite well the popular conception of the value of such efforts and demonstrates quite conclusively their futility.

A HOUSE must have more to commend it than any "unusual" characteristic. It must be good and interesting. It must be well designed and constructed of good materials

and in a good way. It must have solid worth. It must be really good. And it need not be commonplace. To be simply commonplace is quite as bad as to be simply unusual. But the commonplace is not obtrusive; it does not demand attention; it does not insist that it be noted. It has, very likely, the surpassing merit of modesty, and shrinks from the attention its more obtrusive neighbor demands as a right. These are qualities not to be despised, and sometimes arouse feelings of positive thankfulness in the mind jaded by inspecting one unusual house after the other.

BUT the unusual may be pre-eminently desirable and praiseworthy. It is by no means paradoxical that such should be the case. The designers who have left the strongest marks on architectural history have not been those who followed the beaten track, but those who departed the furthest from it. The most rapid glance through the pages of any architectural history will establish the truth of this proposition without argument. Why, then, it may be asked, condemn the domestic designer who goes furthest in the introduction of new ideas?

THE answer is not far to seek. The great designs of any epoch are great not because they are departures from the conventional, but because they are good. This is at once the exact truth and a proper response to the question. It has not been the unusual qualities or the unusual features of their designs which have won universal attention, respect and admiration, but the excellence of these designs and the merits of their parts. In other words, it is the merit of the design which counts, not the strangeness or the newness, not the oddity or the grotesqueness, not the fact that no other building is designed in that way, or that no other structure has a special feature which may be its chief distinction. It is merit, and only merit that wins, and in the contest the design that is simply unusual because it is unusual, fails, and justly fails, to receive any consideration.

THIS is a useful lesson to apply to contemporary domestic architecture, for in the hasty nomenclature of the day the unusual is apt to receive more consideration than it is entitled to. The error arises in supposing that the mere notion of unusualness is itself meritorious. There could be no greater error. If a house has any unusual feature that merits distinction—and it is quite possible that this should be the case—it is because this very unusual matter has been designed with care and taste, and has been adjusted to the whole design in a thoroughly artistic and workmanlike manner.

IT WILL doubtless be agreed on all hands that the merit of a cow is the quantity and quality of the milk she gives. A cow with two heads may be a gold mine to its fortunate owner, but it will not be a better cow because of its unusual physical state. So a house that is simply odd with an oddness that has no merit to commend it, will be without interest or distinction. It is a house that will give greater satisfaction the less it is seen and the more it is avoided. And a house of that sort had better never be built.

Notable American Homes

By Barr Ferree

"Eirianva," the Tuxedo Home of the Rev. Canon George William Douglas, D.D.



ISOLATION is one of the obvious advantages of a large country estate; it ensures privacy and gives distinction but it does not imply remoteness. The large land-owners who have done so much to open up the country and to beautify it, are quite right in insisting on a certain degree of isolation for their dwellings. But it is a special kind of isolation that is required. The house must not be inaccessible nor too remotely situated; there must be communication with the outer world and, if possible, direct contact with it. Of beauty and quiet and peace there must be an abundance; and the place, above all, must be livable.

All of this and much more is provided by Tuxedo Park, the most famous park colony within easy reach of New York. There are many notable houses there, and many fine estates, but few of them are at once so accessible and so isolated, so remote and yet so near, as the mountain home of Dr. Douglas. The metropolis is, in truth, at his very door, for the motor car will take you as quickly to New York as the train, and the towers of Manhattan are distantly visible from one of the craigs in his diversified estate and from the windows of his home. It is scarce more than a drop down to the village and station at the foot of the hills, yet the telephone keeps him in immediate contact with the outer world, and a splendid driveway winds from the valley to the hilltop on which he has built his home. These advantages are so numerous elsewhere as to be quite commonplace in any well developed country region; they give convenience to this place but add no distinction to it. The latter quality, which, after all, is its greatest and most supreme charm, is its distinct isolation. Here is a large and splendid

house, perfectly accessible in every way, easy of approach by train or motor, close to the metropolis, yet actually located in a mountain region that is a wilderness, so far as any outlook from any part of it is concerned. It is a home

in a mountain forest, yet scarce more than a stone's throw from New York. The combination is a rare one and of deep and unusual interest.

The house is a stately dwelling designed by Mr. R. Clifton Sturgis, architect, of Boston. It is H-shape in general plan, with two gables on each end, front and within, and a large service wing applied to one end. It is built of Harvard brick, with sandstone trimmings and is designed with the refined taste and excellent workmanship for which this capable architect is distinguished. The main doorway is in one of the gable ends, and is an archway enclosed within columns supporting an entablature; the door is of carved oak; within is a vestibule, panelled in wood to the ceiling and painted white. The floor is laid with large square tiles, imported from England, light brown in color, and very beautiful. A second door, richly veiled in lace, leads to an inner vestibule or entrance hall. The walls here are panelled in wood in small panels, white painted, and surmounted, above the door heads, with a cornice. Over this is a band of gold Japanese grass cloth that extends to the ceiling.

The floor, like the outer vestibule, is laid in brown tiles, on which are spread handsome Oriental rugs. Directly in face is a monumental doorway, with Roman Ionic columns supporting a plain entablature. Two Japanese carved dragons guard the entrance which opens into the dining room. There are some fine old pieces of furniture here.

On the right is a corridor that extends along the entrance front. It is a rich and splendid apartment, panelled in oak to the ceiling, which is elliptical in form and is decorated with a graceful geometrical pattern in white plaster. There are Oriental rugs on the floor and many paintings, chiefly family portraits. Here also, among other treasures, are some antique

Roman marble busts. The windows, which add greatly to the gallery-like effect of this apartment, have casement openings with diamond-shaped panes; the curtains are old red tapestry; each window has its seat, provided with cush-



The entrance doorway

ions of two-toned red velvet. The furniture is, for the most part, antique, with coverings of old red velvet.

Immediately within the corridor, as one enters it from the inner vestibule, is a recess or alcove containing the stairs to the second floor. The stairs are of oak, with oak rail and balusters, and are covered with an Oriental rug. At the head of the first flight the stairs are returned in a balcony above a door that opens onto the outer terrace. The ascending wall is thronged with paintings, and on the opposite side, on the main floor, is a great cabinet of black oak elaborately carved and giving room for a collection of rare porcelains which are family heirlooms.

The first door in the corridor admits to the drawing-room; a splendid Chinese vase stands on either side of the opening. It is a

room beautifully light in tone, with a low white wainscot—and upper walls finished in cream with a gold pattern. The ceiling has a geometrical pattern in white plaster with a plain cornice. The windows have small white sash curtains with inner cloud curtains. The furniture covering is, for the most part, of brocade, light toned grounds with flowers. The mantel is wood with Siena marble facings, polished Siena marble hearth, and lining of Harvard brick. The fire tools are gilt, as are the side light fixtures applied to the walls. The floor rugs comprise many rare and precious weaves. The room is somewhat irregular in shape, being rectangular with a bay window or conservatory jutting out at one end of the longer outer side, a structure



On the grassed terrace

that happens to be in the precise centre of the terrace front.

At the end of the corridor is Dr. Douglas's study. It is a modest little apartment, the woodwork oak, with Flemish finish, the paper in two-toned maroon, the ceiling plainly plastered, the mantel of wood, inset with red tiles, with hearth of the same; the furniture, chiefly family heirlooms; the curtains red damask. There is a small bay window in front, whose position corresponds to the entrance doorway at the outer end of the house. There is a special collection of rare books in the old-fashioned bookcase that fills the larger part of one side.

The library fills the corner of the house between the drawing room and Dr. Douglas's study, and is a stately apartment of very elegant simplicity. The lower part of

most of the walls is surrounded with bookcases, above which they are hung in green. The wood work is oak. The wood mantel, on which is carved a sentence from Marcus Aurelius, "Live as on a mountain," and which is peculiarly appropriate to this house, has fireplace facings and hearth of sandstone. The windows have thin sash curtains under inner curtains of sage green. At one end of one side is a bay window overlooking the forest without, and adjoining is a sun-room, built between the library and study. There are many interesting works of art in the library, including Japanese bronzes, rare engravings and Roman marbles.

There remains to be said a few words on the dining-room. This is located quite at the other end of the house, and may be entered directly from the inner vestibule. It is

panelled in oak throughout, very dark in tone, and is a sumptuous room, quite in keeping with the general character of the chief rooms of the house.

It is no disparagement to Dr. Douglas's splendid mansion to affirm that interesting as the house is, the gardens and grounds, the forest, the hills and valleys, the walks and open spaces are by far the most attractive portions of his fine estate. It is for these, indeed, that he lives here, and much loving care, and great taste have gone to the creating of outward beauty. One should immediately add that the creation of outward beauty was quite unnecessary here, nor has it in a literal sense, been done; for there is so much natural beauty, so many lovely outlooks, so much native wild-

ness, that one had but to take advantage of the natural situation, to guide what nature herself was doing rather than to determine it, to realize results quite stupendously beautiful. This, indeed, is precisely what Dr. Douglas has done, but it would be a mistake to hint that his labors have been slight. As a matter of fact the exterior work has been immense, but all along natural lines, and with the fundamental purpose of utilizing, in the most beautiful way, what nature herself had accomplished.

There is, therefore, a whole series of gardens and a beautiful succession of outward adornments that make this place one of very extraordinary beauty and interest. Just without the house, between the wings containing the dining-room on one end and the library on the other, is a terrace,



In the rose-garden



A floral border

contained within a low parapet of sandstone and floored with Welsh tile. Steps descend to a second terrace, whose parapet is completely covered with a luxuriant growth of honeysuckle. It is grassed from end to end and at each corner is a vast antique Roman oil jar.

An archway of honeysuckle admits one to the Pleasaunce, which is the first of a series of charming places developed in near proximity to the house. The path is paved with

old brick; the centre is grass-covered, with many small fruit trees. The whole is contained within a stone wall, rising from the mountain side, bordered within with flower beds. Against the house is a conservatory; further on is a supporting wall of old stone and brick, with a tea house or niche of brick, faced with standstone, quite in the centre. Peach trees are trained against the walls on either side of this, and at the farther end is a pergola of weather-stained



The terraces and steps of the inner front overlooking the valley



The stairs are in an alcove at the head of the corridor



The library is a stately apartment of elegant simplicity

wood, brick paved, and vine laden. Some steps lead to a lower level, for the descent now begins. They lead into a grassed and open space, stone-walled on either side, decked with climbing roses and clematis. On the left is the shelter at the opening of the Roque Court. It is built of oak, shingled and paved with brick, with stone steps and stone vases within, a simple but stately structure. The Roque Court is below and is completely embedded in the woods. Beyond, quite under the trees, is a group of marble statuary, representing "September," once owned by Napoleon Bonaparte and brought here from the villa of his mother, the Princess Letitia, at Ancona, Italy. Narrow paths through the trees lead on down to the lower levels where the kitchen gardens of the estate are maintained.

Returning to the open space from which the Roque Court

garden in a very literal sense of the word. Down below the land slopes to the centre, where it has the form of a hollow; the woods have been cleared away here, so that they overlook a gentle sweep of grass. At the farthest end is a copy in Peperino stone of one of the pillars on the bridge of the Quattro Capi which crosses the Tiber in Rome, stood against a background of evergreens.

One may return to the house by means of a monumental flight of steps that ascend from the hollow to the lower terrace; but there is still much to be seen, many walks to enjoy, and woods in which one may lose oneself completely. For the housetop disappears behind the leafy barrier that completely surrounds it on this side, and the walks, although narrow, have an enticement to on-going that is quite irresistible. The paths have been made with easy inclines and gentle grades, and brushing past trees, young and old, one



The dining-room is paneled in oak, very dark in tone

was entered, one may keep on into other gardens, arranged in the same direction, which is parallel to the house. At a somewhat lower level is the Rose Garden. The centre is paved with brick, and at the end, which rises sharply above the mountain side, is a lofty Japanese lantern as a garden ornament. There are rose beds on either side, and beyond and around is the deep stillness of the woods, and their beautiful green foliage encasing this jewel-spot that seems so remote from everywhere and yet which is so near.

Just below one enters the Hanging Gardens, which are developed on the mountain side just below the level we have been traversing. It consists, indeed, of but a single path, but so enriched and embedded within brilliant flower borders on either side, so skillfully developed along the mountain side, with the retaining walls of the terraces above one, and the slope of the declivity below, as to be a hanging

emerges into wonderful outlooks, or comes across some special embellishment or points of interest set up and arranged in an independent manner, yet adding greatly in charm to the whole.

Suddenly you come upon the Dutch garden. The hillside is walled, with brick and stone seat, surmounted by a Silenus standing against a background of laurel and rhododendrons. The flower beds are designed in formal style and are planted with hyacinths, followed later by tuberous begonias. Again you come to the spot where the Italian garden is to be, for Dr. Douglas has not developed his place all in one season, but each year aims to add some new and special point of interest to it. So the Italian garden is not yet beyond the selection of site, a truly Italian one, with cypress and great overhanging rocks on one side and the wilderness on the other. Pine trees, mimic specimens as yet, raised

from seed brought from the Alps, constitute the feature of another spot. Thus one moves on, always something to see, always something to enjoy, nature everywhere helped in spots, it is true, but helped naturally and in a way that gives zest to the ramble. And presently the path grows narrower and narrower. Quite before one realizes it one is standing on a slender ridge, deep sloping down on either side.

The trees have disappeared with the land, for one is far above their tops. A scramble down a couple of rocks

and one stands on the summit of a rocky promontory that rises from an unknown depth. Great mountains shut in the distant view; but in a cleft, as it were, in their mighty sides, the brilliant sun pours down on the towers of Manhattan, that on a clear day, may be seen from this wonderful place of vantage. Hence, if you please, you can walk on in the forest for half an hour without leaving the private grounds, and still beyond lie thousands of acres of Tuxedo Park, where wild deer roam in peace, and ferns and wild flowers blossom in sun and shade.



"Eirianva : " The oak paneled corridor with geometrical ceiling in white plaster

New Process for Damascening, Inlaying and Blending Metals

By Amos Bradley Simpson



THE beautiful art of damascening, the origin of which is buried in the depths of antiquity, but which no doubt hails from the East, has been subjected to repeated modifications during the past few years in order to render it more commercially applicable than it probably ever was even in its halcyon Oriental days. The hand-wrought work so exquisitely performed at the expenditure of considerable time centuries ago, is far too costly for the present age, except to the connoisseur. This process briefly consisted in chasing the design upon a metallic foundation of the object to be decorated and then filling the incisions with fine wire or strips of other metal, generally silver and gold, by means of a special tool, the whole finally being smoothed and polished. In order to render the inlay as immovable as possible, the recesses were undercut, so that the decorative metals were in reality dovetailed into the main fabric.

Such a delicate operation calls for remarkable skill and patience combined with a sensitive hand, and for this reason cannot be executed by machinery. Yet at the same time there prevails at the present day a widespread demand for metal inlay work, and various methods have been evolved for the more rapid and cheaper accomplishment of the work, such as the ether, parcel, or close plating, fusion, electrical, and lead processes. Recently, however, attention has been centered in the new system of inlaying and ornamenting metallic surfaces that has been perfected by Mr. Sherard Cowper-Coles, the well-known British electro-metalurgist, which possesses great commercial possibilities, owing to the exquisite character of the work, combined with the rapidity and cheapness with which it can be carried out.

This process is based upon a discovery made by the inventor some five years ago during a series of experiments upon which he was engaged in connection with the annealing of iron. In the course of these investigations he found that metals in a fine state of division, that is in the form of powder, when raised to a certain temperature which was actually several hundred degrees below their melting point, in contact with a solid metal, volatilize or give off vapor, which condenses on the solid metal immersed in the powdered metal. Recently the inventor in following up the discovery has turned it to distinct advantage for decorative work, the results of which are similar to damascening, but with the additional and important advantage that there is no possibility of the metals so blended together subsequently becoming separated, as is often the case in ordinary damascening. At the same time it also enables a more extensive range of effects to be secured, as a large number of metals can be blended together which previously has been impossible, and alloys of many colors and tints can be obtained in one operation of baking. Moreover,

the thickness and depth to which the metals are to be inlaid and onlaid can be controlled at the will of the operator.

The process is exceedingly simple. The article to be decorated is first covered with a stopping-off solution about the consistency of cheese, and can thus be easily cut with a knife. The design of the desired inlay is then executed upon this composition by means of a specially designed tool having a sharp edge. Those portions to be removed are then lifted and cleared away, leaving the surface of the foundation metal exposed. This operation completed, the article is placed in an iron box containing the metal which is to be used for the inlay in a powdered form. If, for instance, the inlay metal is to be zinc, the box is accordingly charged with zinc dust, a product obtained direct from the zinc-smelting furnaces. The iron receptacle, together with the

objects to be ornamented and the zinc dust, are inserted in a suitable baking oven and heated to a temperature of about 500 degrees Fahr., while the melting point of zinc is 686 degrees Fahr. The time and temperature vary according to the thickness and depth of the inlaying which is required, and range from a few minutes to several hours. A little experience, however, soon teaches the operator the precise time and temperature necessary for obtaining given results with different metals.

When the article has been sufficiently baked, the box is permitted to cool, opened, and the articles withdrawn. Brushing with a stiff brush serves to remove the superfluous dust and also the stopping-off composition which the process of baking has loosened. The stopping-off and baking processes can be repeated several times when it is desired to inlay two or more metals.

The point may be raised that the metal box containing the metal dust will in a short time become thickly incrustated with metal, but such experience has proved not to be the case, for the reason that the metal box is

hotter than the powdered metal. A useful type of furnace or baking oven for general work, such as panels, trays, and other flat articles, is that shown in the accompanying illustration. It consists of an iron vessel eight feet in length by four feet in breadth and one foot deep. The box is half filled with the metal dust, and the objects to be treated are well immersed in the powder, care being observed that they are adequately covered over therewith. The box is covered with a lid, and over this an iron framework is placed carrying fire bricks and provided with a small central flue to draw the heat from the burners up the sides of the box and over the top, to secure even and regular heating over its whole surface. Such a furnace can be constructed at a cost of about \$150 complete.

The damascening produced by this method is of a more permanent character than the ordinary ancient hand-wrought process. It is impossible for the inlay to become detached from its foundation, for the simple reason that



1—Prayer book cover in copper inlaid with zinc

the two under the application of the heat become alloyed together. It is also found that the inlaying metal in the case of zinc is very much harder than the brass or copper into which it is inlaid.

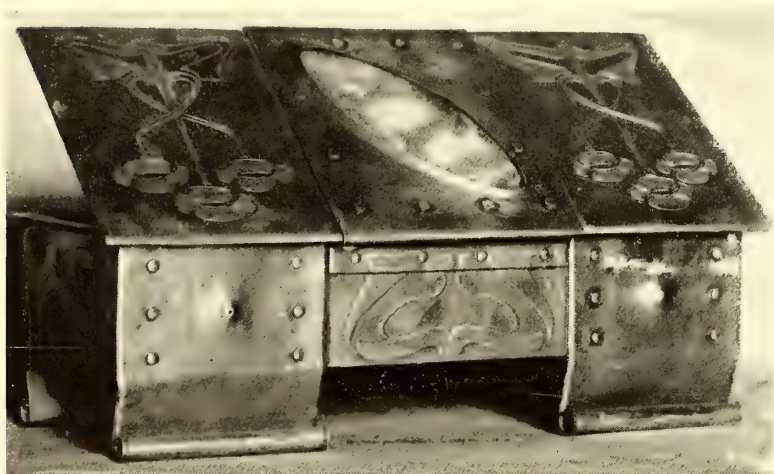
One very notable feature of the process, which is of considerable importance, is that a wide variety of colors and alloys can be obtained in the one operation of baking. For instance, a copper tray is to be inlaid with zinc, and at the same time it is desired to convert certain portions of the copper into brass. This is accomplished by varying the thickness of the stopping-off composition, and by baking at a somewhat higher temperature than would otherwise be employed. The result is that certain portions become converted into golden-colored brass, while the other portions remain unalloyed copper. The inlay work is carried out so delicately and evenly, that in hammered metal objects the hammer marks in the original article will



2—Copper tray inlaid with zinc and brass

graded. It must not be thought that the effects secured are only obtainable by the use of zinc and copper. Such is not the case, since the more subtle shadings and hues between tin, aluminum, nickel, cobalt, and other metals can be as easily produced. In the photographs accompanying this article the contrasts of zinc and copper only are shown, for the simple reason that the colors possible by using other metals do not produce a sufficiently striking effect in a photograph.

Nor is the process merely confined to the embellishment of flat surfaces. It is as readily applicable to raised surfaces and objects of all shapes and sizes, such as tea-pots, coal vases, and other similar articles. It can also be adapted to the finest filigree as easily as to bold work, as is required in panels or heraldry. An important development has been in connection with its application to book covers, the appearance of such damascened



3—Iron box inlaid with zinc and enamel



4—Copper tea pot inlaid with zinc and brass



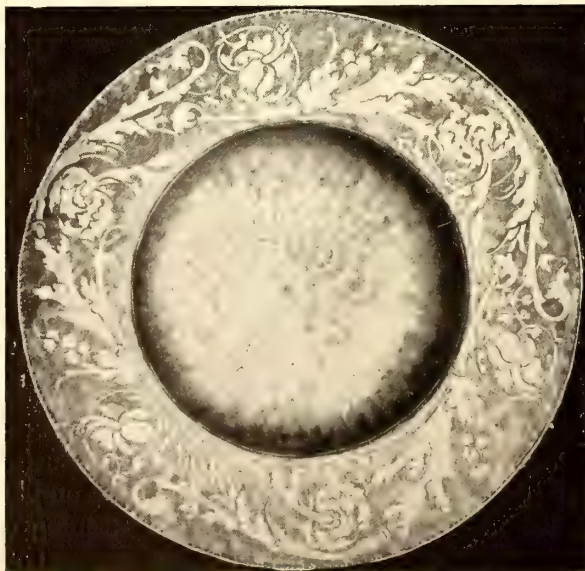
5—Copper and brass vessel inlaid with zinc

show through the inlay as if the decorative metal had been hammered in. If desired, the metal foundation can possess the stippled hammered effect while the inlay has a smooth surface, thus giving a striking and pleasing contrast. Some of the effects obtained are very beautiful in character. The zinc inlay can be made so that it is surrounded by a fine line of brass, or be both inlaid and onlaid, in which event the latter ornamentation can be raised as much as one-sixteenth of an inch above the surface of the copper. Again, iron can be inlaid with both zinc and enamel, which yields an attractive effect, or a variety of hues produced by burning the whole of the copper surface with zinc and then etching the pattern down to the different alloys formed intermediate between zinc and brass. By this arrangement the variety of tones secured is both extensive and beautifully

metal-bound volumes being appreciably enhanced.

One distinct charm about this new process, and one that, moreover, is unique, is the absence of the sharp line of demarcation as is characteristic of damascening. Instead there is a soft transition from the inlay to the surrounding foundation metal. That is to say, where zinc is inlaid into copper, the inserted metal is surrounded by a narrow band or halo of golden-colored alloy. It is obvious, therefore, that very beautiful toned colored effects of great subtlety can be produced, ranging from silver white zinc to yellow brasses and bronzes of innumerable shades, graduating to red copper and gradations of yellow and golden browns.

The use of the new process of damascening metals is a very splendid art, and its revival will, it is hoped, be met with appreciation of all lovers of the antique.



6—Hammered copper dish inlaid with zinc

The Japanese Persimmon

By E. P. Powell



THE value of our native persimmon is just being discovered. One variety, the Josephine, was found by Judge Miller, of Missouri, and is now being propagated by Mr. Munson, of Dennison, Texas. I am growing it successfully at Clinton, New York, where it is entirely hardy; and at Sorrento, Fla., where the native persimmon is in its glory. I found hundreds of young trees starting up everywhere in the pine woods. I think that, only for the annual burning over of the State, the persimmon would put up a good fight against any other sort of tree in central Florida. Unfortunately, a large proportion of these seedlings do not give fruit, and must be grafted. In Florida we have grafted them with the Japanese sorts, and it is a great success. We understand that these new sorts from Japan are in need of pollen from our native trees, at least this is asserted by those who have tried them in orchards. I have seen no lack of pollination in my trees.

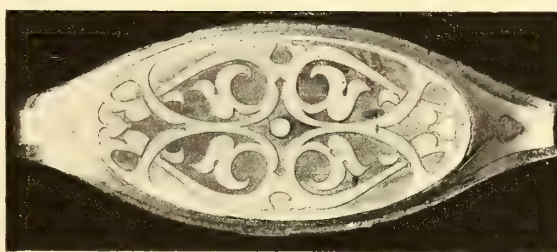
The native sorts are capable of undoubted development, and I do not see why this should not become a very remarkable fruit in the extreme North. The tree certainly is hardy, and the wood is the American ebony—hard and of decided value in cabinet work. But at Clinton I have never known a single failure of the fruit. Only on one occasion the season was too dry to give us perfected fruits. A tree when in full bearing loses its leaves before the first of November, and then the limbs are simply weighed down with golden balls. I secured scions of half a dozen of the best sorts I could find in Virginia, Indiana and Missouri. The Josephine was the best, although others were less seedy and were earlier. It now stands as a problem for American horticulture to give us varieties nearly or quite seedless and as large as the Japanese sorts. I feel sure that this will come about. I have one seedling bearing at six feet high, and giving me a fruit fully equal to Josephine, possibly a little later.

The Japanese must have developed their magnificent varieties from something very similar to ours. The shape has been changed somewhat, so that we have them like a tomato, and others like an acorn, only two to three or even four inches in diameter. Some of the varieties bear on trees that might as well be called bushes,

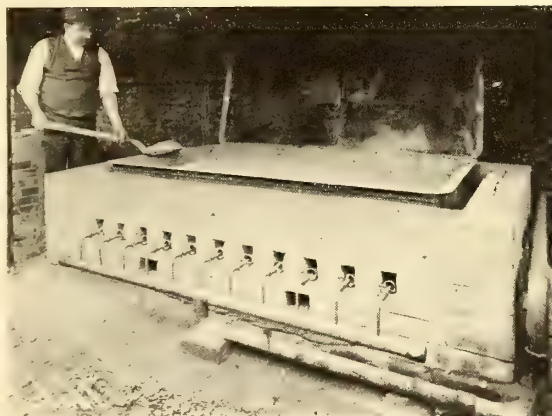
while other varieties hang down from very shapely trees, looking much like a magnolia, thirty to forty feet high. The food value of these persimmons is very great, and I think I could dine on two or three of the Triumph sorts and a half-dozen crackers with comfort. The most convenient way for eating them is with a teaspoon, in some cases the skin being quite tough, but in others easily removable and hardly noticeable. The tree takes very kindly to our sandy soil in the South, but just as kindly to our clay at the North. The shipping quality varies with different varieties; some of them packing and carrying about as well as pears. They differ also in astringency. Some of them are uneatable until quite ripe, when they lose all trace of astringency; but other sorts are eatable before entire ripeness. This astringent quality of the persimmon can therefore be eliminated, by propagating by selection. Taking seedlings from the least astringent, we could in a few generations entirely abolish this peculiarity. I presume that nature left it in the persimmon in order to protect it from animals and birds. They certainly would not taste twice of a green persimmon of the astringent sort. Our natives have the same quality in excess; it can be and must be bred out.

The persimmon is predestined to become a great market fruit in America, and all the Japanese product that we can send North from Florida and other Southern States is immediately caught up at high prices. It has not been in the country very long, and our American people have got to become familiar with it. So here we have our problem before us, in two forms; first to improve our native persimmon, and make it as good as the Japanese; secondly to select the Japanese sorts for hardiness, until we can get those that will stand the climate of New York and Minnesota. The tree takes good care of itself, although it is brittle. It would make a good filler, where it is hardy to stand between rows of apple trees. I do not know that the Japanese sorts are now growing anywhere north of Georgia—possibly in Kentucky and Tennessee and Virginia. Rev. Mr. Loomis, of Yokohama, who was one of the first to introduce Japanese sorts, was, at last notice, trying to find Korean sorts that would endure a climate not unfamiliar with zero.

There is a curious similarity between the pawpaw and persimmon, not only in the fruit but in the tree.



7—Copper tray covered with the stopping-off composition ready for baking



8—Oven in which the damascening is done



9—Copper dish inlaid and onlaid with zinc

American Homes and Gardens Garden Competition

The Second Garden Prize of Fifty Dollars

Won by Charles D. Davies,
Englewood, New Jersey



IN THE making of a garden, which is situated in Englewood, N. J., on a lot 50x150 feet, the desire was to have a self-made home spot with enough originality about it to warrant me conscientiously calling it "my garden." When I took the place it was nothing but a sand heap, and my knowledge of gardening was equally barren.

The first thing I did was to read everything on the subject that came within my reach. I also got busy, and became "the man with the hoe," the rake and the spade. Time went on and I was delighted to see order coming out of disorder. Things grew, even the weeds, while I slept, which was precious little, for I had "gardenitis" of the most pronounced type. I soon awoke to the fact that the price of a well-kept, weedless garden is eternal vigilance.

I also became aware that a garden in its development is not of mushroom growth. It takes more than a day or a year for it to take on form and beauty. My motto was "work and be patient." One minute a day spent in a garden for twenty years amounts, with compound interest, to nearly a month's work. That beautiful elm cost only one-half minute a half-century since. One's garden is a savings bank for the investment of minute fragments of time, and at every moment for months together, my garden was asking something at my hand and it saved what I gave it, and at the same time gave me pleasure and health.

Of course, I realized that nothing pretentious could be accomplished on so small a plot, and that I must of necessity go slow, on account of the limited dimensions of my purse. Considering the numerous shrubs and plants to choose from, and the many which the catalogues assured me "no garden should be without," I was in danger of overcrowding the place, which would make

it more suggestive of a nursery than a garden. Thanks to the price lists, I was saved this objectionable feature.

I thought I would like to enclose my garden on both sides and on the rear with a privet hedge. At six inches apart I needed 700 plants. The growers quoted these at five dollars a hundred. This staggered me, so I bought 100 privet at auction for three cents each, and from cuttings raised the balance. In about five years I had 350 feet of hedge three feet high and solid to the ground. To gain the largest appearance of expanse to the lawn which surrounds the cottage, I avoided cutting it up with flower beds or shrubs except on the borders. I avoided also the planting of large trees or shrubs which would be out of proportion to the size of the place. As may be seen from the plan, I avoided straight lines; nature never works that way, and I tried to conform to her teaching. The unsightly clothes posts so glaringly obtrusive in small gardens, were removed and other means to their end adopted.

The stone foundation of my cottage stands about four feet above the ground. This I covered with ampelopsis veitchi, which is not allowed to run on the woodwork of the house. This forms a pleasing background for a bed of shrubs and flowers and gives the cottage the appearance of having been set down in their midst. This bed, which runs from the entrance to the rear of the cottage, contains the following hardy shrubs and plants, which give

great satisfaction in constant change of color, improve with age, and require the least amount of care: Japan maples, azalea mollis, lili-um aurantum and rubrum, hybrid roses, larkspur, blue and white platycodons, deutzia and hardy chrysanthemums. Intermediate spaces are filled in the spring with asters (raised from seed in cold frame), geraniums, and gladiolus. On paper it may look to some as if this kind of planting was a jumble or a riot.



A garden in New Jersey



The great tree is the real keynote of the garden

Not so—it produces an ever-changing aspect from spring to fall, and is never tiring to the eye. Let it be understood, however, that this planting is not done in a hit-or-miss fashion, but with due regard to height of plant and color of flower. Each color is massed, and the entire bed is bordered with dwarf sweet alyssum.

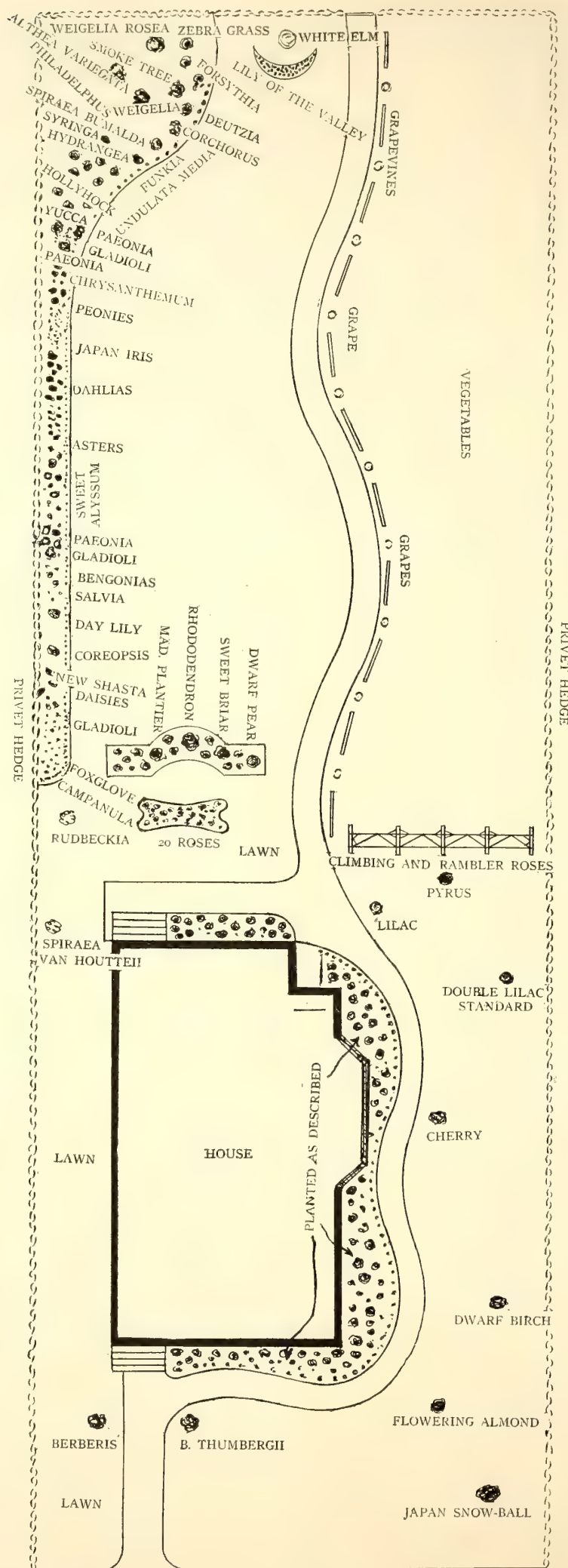
I suppose most cottage gardens are "at their best" when the annuals are in bloom galore. My purpose in planting was to secure color in the garden and flowers for the table, from early spring tulips and hyacinths to late fall chrysanthemums and dahlias. At no time is there a great profusion of bloom. On a small place one has to sacrifice quantity for continuity of flowers. I will say little about the back of the cottage, for what is planted there, and the way it is laid out, is clearly shown in the ground plan and photograph. The clump of shrubs shown is satisfactory. Throughout the entire season some shrub is in flower. Under the elm tree at the end of the lot I found a favorable location to plant a crescent of lily-of-the-valley. I put in twenty-five pips about six years ago. We now get hundreds of flower spikes every season.

The arrangement for the front porch was once, and will be again, quite effective. Three arches are strung with three-eighths-inch iron rods, the upper parts of which are filled in with strong galvanized iron mesh to support vines. This plan gives ample shade without obstructing the view. At the end of the porch facing the southwest, grows a wistaria which blooms in early spring. Spreading from the centre post is a crimson rambler rose which flowers in late June. To the right of this is a clematis paniculata (August). On the left of the rambler is planted a clematis jackmanni (August). Unfortunately both

of these clematis were injured last winter, and this year's growth is not sufficient to show the arrangement perfectly. At the other end post is now growing a climbing rose, but I must await with a gardener's patience its coming day of glory.

From the ground plan may be seen the winding walk which runs down the centre of the garden from the rear of the cottage to the end of the lot. Grapevines are planted and trained in conformity to the curvature of the path and hide the vegetable patch from the flower garden. It is also hidden from the street by a rustic arbor over which are trailed climbing roses. In front of this arbor, in plain view from the street, is placed a dwarf tree worthy of special mention. It is a pyrus (flowering crab). In May this pyrus is covered with clusters of fragrant double pink rose-like flowers. Were I restricted to one tree or shrub this pyrus would be my unequivocal choice. Judging from my experience, one need seldom fail to raise plants from seed, providing he has a cold frame. I usually have more than I need of petunias, asters, salvia, etc., and a fine display of single dahlias. Tuberous rooted begonias I plant out in the cold frame in March; they take so long to start. An interesting and successful experiment is planting gladiolus close to and between the peonies. The flower spikes coming up between the leaves give the peonies double credit in flowering.

To secure the best results from the economizing of space, I plant the gladiolus singly in four-inch pots early in the spring. When the leaves are about twelve inches high, they are taken out of the pots and planted between the foliage of the peonies, where their flower spikes will be the most effective. The bulbs may be started in lots of ten or more every two weeks



Plan of the garden and planting

from April to May, to prolong the blooming period. In writing of peonies, one cannot commend them too highly. Their large flowers, disposed in elegant disorder or with graceful regularity, and in varied colors, are magnificent. The plants are, moreover, very hardy and they have an indefinite longevity, and as for price, they are within the reach of all.

For the summer and autumn decorations of the flower garden, I am finding hollyhocks to be of great value. The hollyhock has been in our gardens for three hundred years, and it holds its proper place there to-day. Some object to the hollyhock in flower gardens on account of its height, and there is good reason for so doing, if they are put in front of low growing plants instead of at the back. In such a position it is a stately plant and the grandest of all for shrubbery borders. A good selection of hollyhock is unquestionably a great attraction. When I offset my failures by my success I must confess with George Washington that "gardening is the most interesting, enjoyable and healthful employment of man," and I might add, of woman also. For in the making of this garden I am indebted for valuable suggestions from my wife; and that is why, with mutual satisfaction, we call it "our garden."

This ends the de-



The house from the street



Vines and shrubbery of the side



The beginning of the garden

scription of the garden as it stands.

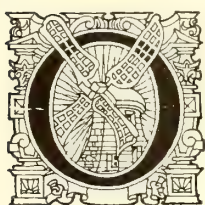
The chief feature of a garden is in the beauty of the lawn. Give this your special care. Grass propagates itself from the roots, hence frequent cutting is advisable. To keep up its beauty give the lawn a light seeding early in the spring and fertilize with Canadian wood ashes. This is preferable to stable manure, which is not only unsightly but contains more or less weed seed.

When sowing flower seed in boxes in the house or in the cold frame always sow in drills so that you can distinguish them from the weeds that may appear. It is a safe rule to sow seed twice the depth of its diameter. As you will be sure to have roses in your garden remember that they are great feeders. You cannot over-feed a rose bush. Prune them early in the spring, cutting out all dead wood. This pruning will start root action, in response to which new wood will form on which only you may expect to have flowers. As soon as the leaves open start with an occasional dusting of the plants with "Hammonds Slug Shot" to ward off impending pests. One ounce of prevention is better than a ton of care. Should a late frost pay your garden an unwelcome visit after things have started, wash the frost off with cold water before the sun's rays strike them.



Some Eastern Homes Costing From Seven to Eight Thousand Dollars

By Francis Durando Nichols



ONE of the most important principles to be considered in the building of a suburban home is that which affects the physical, mental and moral well-being of the prospective home-builder. A second principle which is equally important is the element of sincerity expressed in the designing of a house in a style of architecture which will be permanent, and characteristic of all that is best in art expression.

The architects, Messrs. Freeman and Hasselman, of New York, have given much thought to the designing of the houses illustrated in this group, and have designed them so that they will meet all necessary requirements, in the exterior design and in the interior arrangement of the various rooms.

The houses illustrated herewith were built at "Oakcroft," Upper Montclair, New Jersey, and they are representative of the best type of modern residence. While the interior arrangement of all the houses is similar, the architects have designed the exteriors in different forms and styles in order to make each house sufficiently distinctive.

The house erected for J. H. Walter Lemkau, Esq., Figures 1, 2, 3 and 4, is built in a simple and artistic manner. The exterior walls are of frame construction covered with metal lath, then coated with cement stucco, and tinted a natural silver gray. This color blends well with the gray painted trim and the sea-green stained shingled roof. The entrance to the house is reached through a vestibule, which is provided with an inner door, glazed with beveled plate glass, extending the full height of the door. The hall has a staircase, with a newell post rising to the ceiling, and supporting an arch. The balusters of the staircase are cut out of red oak in an ornamental manner. The living-room extends across the front of the house, in the front wall of which is built a group of small latticed windows, while on the opposite side of the room there is an open fireplace, built of brick, with facings and hearth of Roman brick extending to the mantle shelf,

which is supported on brackets. The walls of the living-room are covered with a two-toned brown wall-paper. The dining-room is octangular in form. It has a wall-covering of a plain yellow green tone from the base to the plate rack, which last extends around the room. The space above the plate rack is covered with a forest green wall-paper in an effective manner. The fireplace, built in one corner of the room, is constructed of red Roman brick. The mantle has a combination china closet, built in over the mantle shelf with doors glazed with plate glass in small lights. The kitchen is trimmed with cypress finished natural. It has a white-tiled wainscoting, and is provided with all the best appointments, including a large butler's pantry, a pot closet with outside window, a sink, and a lobby large enough to admit an ice-box. The second floor contains four bedrooms, and a bathroom, while the third floor comprises two bedrooms, a bath, and a trunkroom. The bedrooms have white painted trim, and floors stained a Flemish brown. The bathroom has a tiled wainscoting, and porcelain fixtures, with exposed nickel-plated plumbing. The cellar contains a laundry, storage-room, steam-heating apparatus, and fuel room.

The house built for John L. Parrish, Esq., as shown in Figures 9, 10 and 11, is of a similar plan as the

house shown in Figure 2. The exterior, however, has been changed, sufficiently to give it a different effect. The versatility of the architect is well demonstrated in these two houses, for while the plans are similar, the exteriors are changed in such a manner as to present a characteristic difference. The yellowish gray-tinted stucco of the walls of Mr. Parrish's house, the gray-green of the trimmings, and the mottled-green stain of its shingled roof, make a harmonious tone of color. The hall is trimmed with oak, and has an ornamental staircase, with a panelled seat. The living and dining-rooms have fireplaces built of Roman brick with the facings and hearth of a similar brick and finished with a wooden mantle shelf supported on corbeled brackets. Both are trimmed with oak, and the living-room



Figure 1—The staircase of Mr. Lemkau's house has a newell post extending from floor to ceiling

has a wall-covering of two-toned yellow striped wall-paper, while the dining-room has a wall-paper of mustard yellow, reaching from the floor, to the plate rack which extends around the room. The wall-space above the plate rack is covered with a brown and yellow wall-paper in a large figure. The kitchen and its appointments are complete in every respect. It has a white tiled wainscoting and a natural trim of cypress. The second and third floors are trimmed with cypress and painted with white enamel. There are four bedrooms and a bathroom on the second floor, and two bedrooms and a bathroom on the third floor. The bathrooms have tiled wainscoatings, and porcelain fixtures with exposed nickel-plated plumbing.

The house illustrated in Figures 5, 6 and 7, is another Oakcroft house built for Aaron Godfrey, Esq., and is of the English half-timber style, with stucco for the first story and half-timber work for the second and third stories. The half-timber work is stained a soft brown tone, harmonizing nicely with the gray stucco and the moss-green stain of its shingled roof. The hall, living-room and dining-room are trimmed with oak, finished with a Flemish brown. The hall has a two-toned brown wall-paper and the living-room a two-toned green striped wall-paper, and also an open fireplace, with brick facings and hearth. The dining-room has a plain green paper to the height of six feet, at which point a



Figure 2 Mr. Lemkau's house is built of stucco, tinted a natural silver gray color

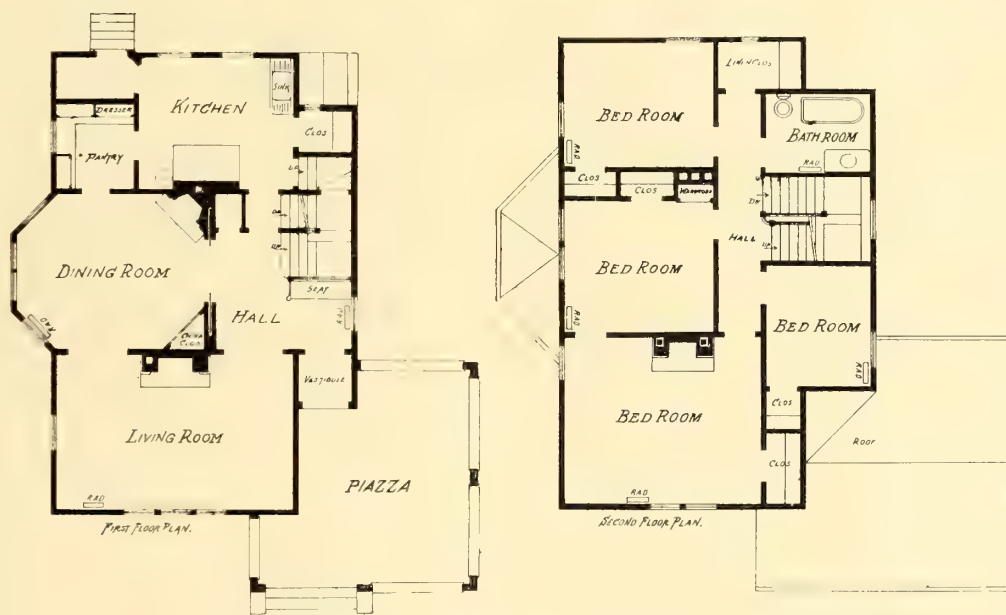


Figure 3—The first and second floor plans of Mr. Lemkau's house



Figure 4—The dining-room of Mr. Lemkau's house has an open fireplace and a china closet built in above it

plate rack is built around the room. The wall space above the plate rack is covered with a forest-green paper. The kitchen is trimmed with natural finished cypress, and it has a tiled wainscoting. The second story, which contains four bedrooms and a bath, is also trimmed with cypress, painted white. There are two bedrooms, a trunk-room and a bath on the third floor. The bathrooms have a tiled wainscoting and are provided with porcelain fixtures, with exposed nickel-plated plumbing.

An interesting house is the one built for Frederick A. Dibble, shown in Figures 20, 21 and 22. The exterior is also of stucco tinted a creamish white. The roof is painted a moss-green. The first floor is trimmed with red oak finished in Flemish brown. The fireplaces in the living and dining-rooms are built of red brick with hearth and facings of the same. The service end of the house is complete. The

kitchen has a tiled wainscoting and a natural finished cypress trim. The second floor contains four bedrooms and a bath, and the one above, two bedrooms, a bath and a trunk-room. The bathroom has tiled wainscoting and exposed nickel-plated plumbing. The cellar contains the heating apparatus.

The house built for John R. Brandon, shown in Figures 8, 12 and 13, is of another type and with more formal lines in its design. The charm resides in its massive wall surfaces of stucco, which are well broken by the numer-

ous small lighted windows, with which the exterior walls are pierced. The house is of frame construction covered with metal lath and finished with a triple coat of cement stucco, tinted a light yellow. The trimmings are painted brown and the roof is covered with shingles, stained a red-dish-brown. The interior arrangement of the house is similar to the plans shown in Figures 6 and 7, belonging to the house shown in Figure 9, with the exception that there are no bay windows at either the first or second stories of this house. The versatility of the architect is again very well expressed, for he has been able to design a distinctive exterior for a similar plan. The halls and living-rooms are trimmed with oak, stained and finished in a forest-green. The fireplace in the living-room is built of buff Roman brick with the facings rising to the height of four feet, at which line it is finished with a mantel shelf. The walls are covered with a two-toned brown wall-paper, with a large



Fig. 5—Mr. Godfrey's house is designed in the English half timber style

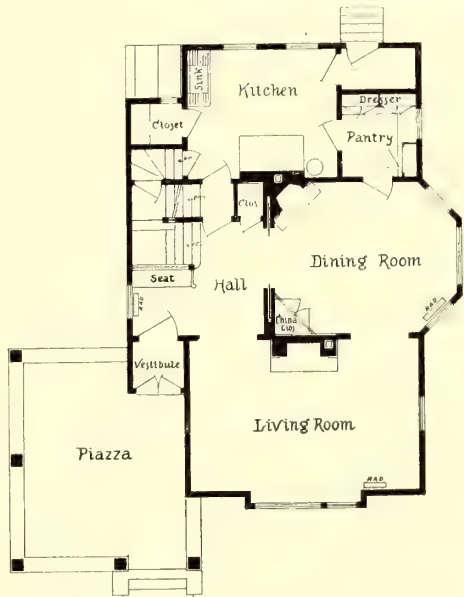


Fig. 6—First floor plan of Mr. Godfrey's house

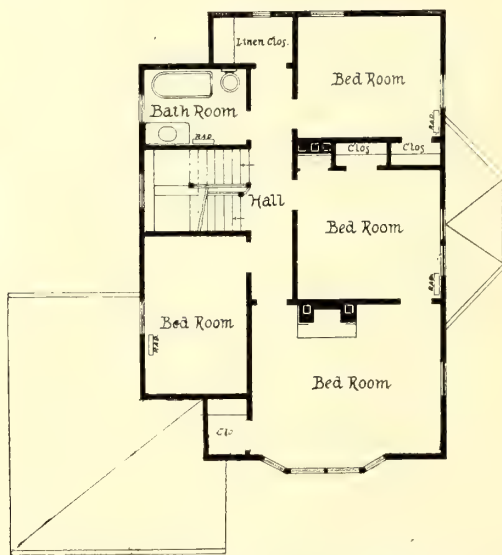


Fig. 7—Second floor plan of Mr. Godfrey's house

figure covering most of the surface space. The dining-room is trimmed with oak, finished in Flemish brown. The wall is covered with a plain yellowish-green paper, extending to the plate rack. The wall space above the plate rack is covered with a red and green wall-paper. The butler's pantry and kitchen are complete. The second floor is also trimmed with cypress and painted

white, with the exception of the doors, which are finished in a forest-green. There are four bedrooms and bath-room on this, and two bedrooms and bath on the third floor. The bathrooms are tiled and are furnished with porcelain fixtures and exposed nickel-plated plumbing. The cellar contains the laundry, fuel room and heating apparatus.

Another house of distinctive character is the one built for Archery H. Loomis, Figures 14, 15, 16, 17 and 18. The house is square in form, with lines well broken by bay windows, living-porch and small latticed windows. The entrance is



Fig. 8—The charm of Mr. Brandon's house is its massive wall surface and numerous small lighted windows

reached by way of the living-porch, which is built at one side of the house, leaving the living and dining-rooms free to the sunshine and air. The vestibule is provided with an inner door, glazed with bevel plate glass, which forms the entrance to the house. The stairs extend up from the hall to the second floor, and are planned in such a manner as to permit of a large opening between the hall and the living-room, both of which are trimmed with red oak finished in a Flemish brown. The walls of the living-room are covered with a two-toned gold wall-paper. The fireplace has brown tiled facings and hearth, and a mantel and bookcases built at either side of the fireplace. The dining-room, in this plan, does not connect with the living-room, but is reached direct from the hall. It is trimmed with oak, finished in a forest green effect. The walls have a battened



Fig. 9—Mr. Parrish's house is built of gray stucco with mottled green stain shingled roof

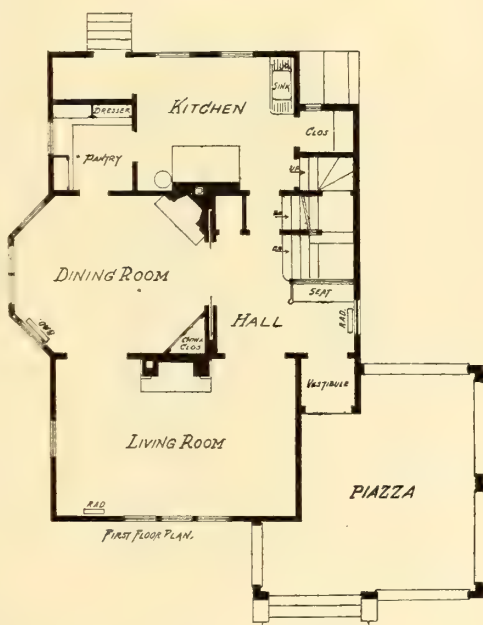


Fig. 10—First floor plan of Mr. Parrish's house

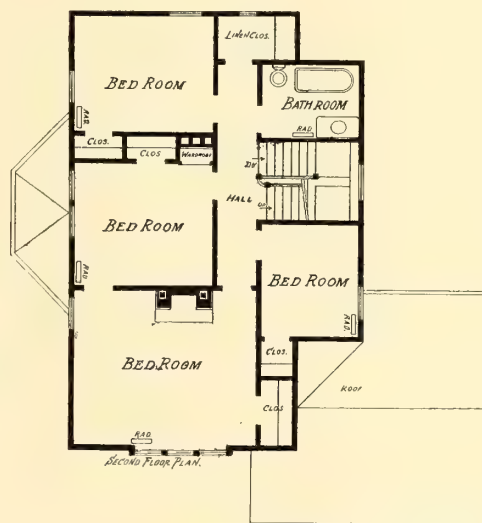


Fig. 11—Second floor plan of Mr. Parrish's house

at which point it is finished with a plate rack. The wall space above the plate rack is covered with a green and brown wall-paper in a forest design. The fireplace is built of red Roman-shaped brick, and is surmounted with a mantel shelf supported on corbeled brackets. The kitchen has a tiled wainscoting and cypress trim. The second floor contains four bedrooms and a bathroom, and the third floor has two bedrooms, trunk-room and bath. All the bedrooms have white painted trim, mahogany finished doors, and walls covered with artistic wall-paper. The bathrooms are furnished with tiled wainscoting. All of the houses are built of the best material and are furnished complete with hardwood floors, combination gas and coal ranges, steam-heating apparatus, porcelain lined tubs in the laundry, combination electric and gas fixtures, speaking tubes, and every modern convenience.



Fig. 12—The living-room of Mr. Brandon's house is trimmed with oak, finished in a forest green



Fig. 13—The dining-room of Mr. Brandon's house is trimmed with oak, finished in Flemish brown

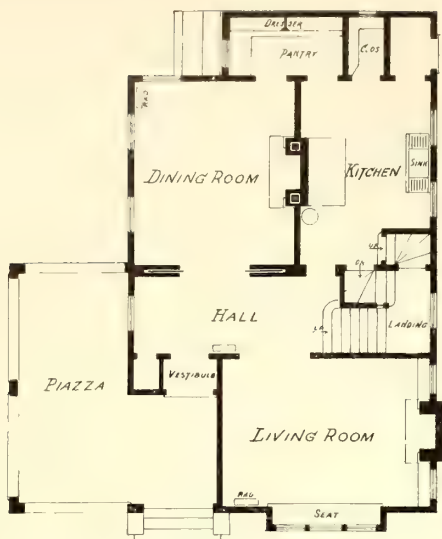


Figure 15—The first floor plan of Mr. Loomis's house



Figure 14—The lines of Mr. Loomis's house are square in form and are well broken by a bay window and a living porch



Figure 17—Second floor plan of Mr. Loomis's house

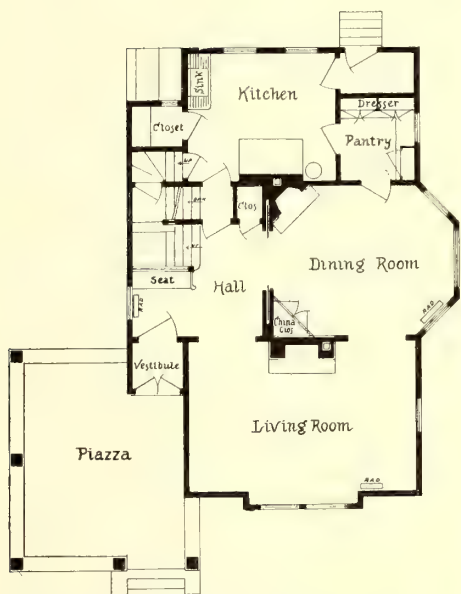


Figure 21—The first floor plan of Mr. Dibble's house



Figure 20—Mr. Dibble's house has an exterior of cream white stucco and a moss green shingled roof



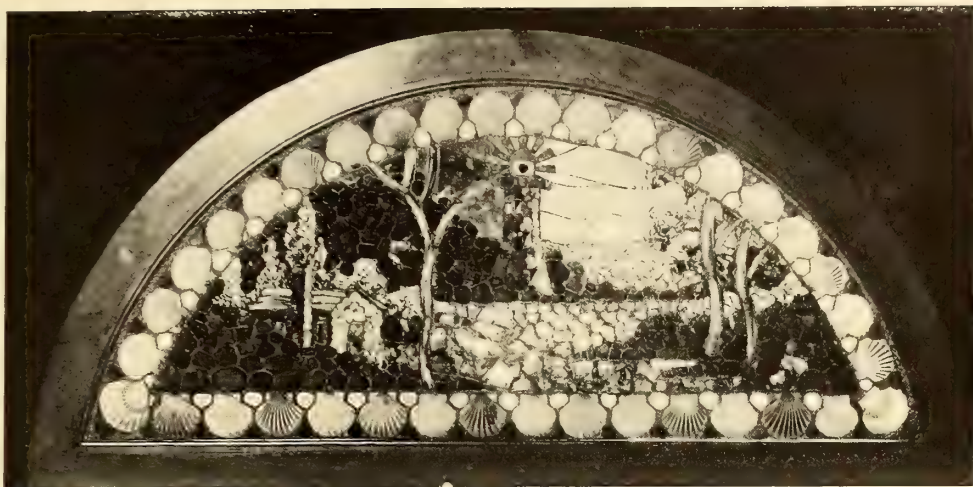
Figure 22—The second floor plan of Mr. Dibble's house



Figure 16—The sitting room of Mr. Loomis's house has an open fireplace with brick facings and a Colonial mantle



Figure 19—The dining-room of Mr. Loomis's house has a paneled wainscoting and a forest green color scheme



"Moonrise" Lunette over a doorway

Marine Mosaic

By

W. Cole Brigham



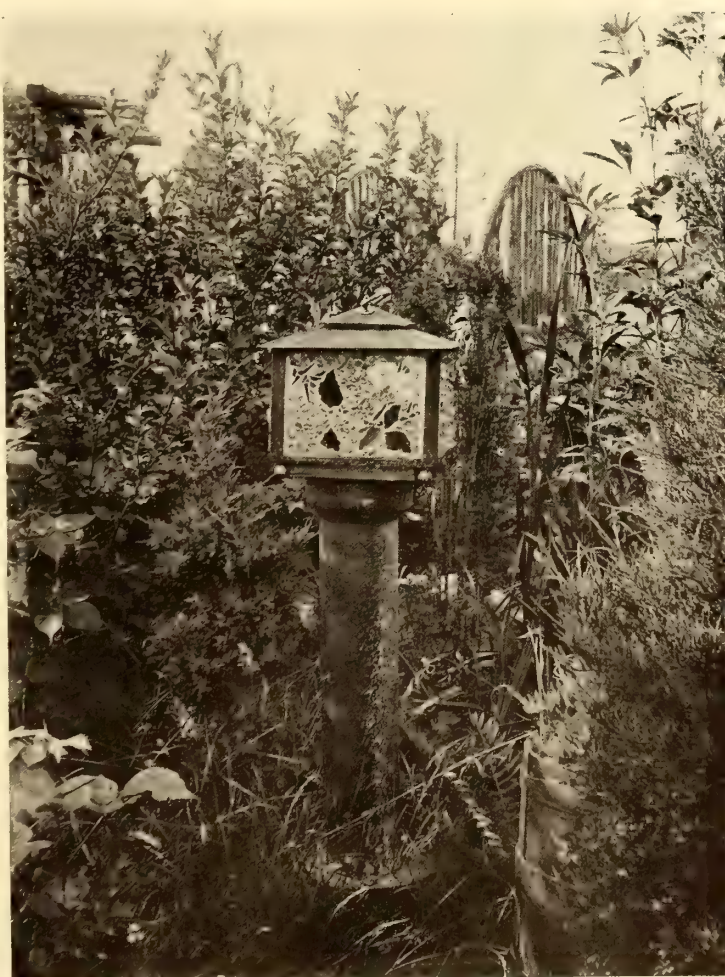
MARINE MOSAIC is the artistic adaptation of shells, stones and glass, strongly cemented to form effects beautiful in color and unusual in design. Marine Mosaic in place of rich stained glass is entirely original and practical. In connection with the metals it is wonderfully harmonious, lending its beauty to such practical and useful articles as fire, table and tea screens of iron construction, lanterns, electric light globes and candle shades framed in brass, and lamp shades leaded. In combination with the finer metals, gold, silver and bronze, table utensils are wrought in effects both beautiful and natural, as is shown by the illustrations of the Iris vase, the Magnolia loving cup and the fruit dish of Grape design.

This art originated in my Studio, Harbor Villa, Shelter Island, N. Y. The mediums for its construction are from nature's storehouse, the fields, beaches and the sea. The field yields its motives in the forms of flowers and fruits of gardens, wild and cultivated, to say nothing of the landscape effects to which Marine Mosaic so aptly lends itself. The beaches give the material with which it is possible to produce the most delicate tones by shell and pebble. These materials are used in their natural state, no artificial coloring being added, nor any chemical brought to play to diminish or soften these quiet tones and delicate shades. The sea, as the fields, furnishes wonderful themes for the displaying of

these rare hues and in addition supplies the artist with yet another medium with which to render marine forms. In the seascape the natural shell of a crab has been utilized to form the body as designed. This is one of the many opportunities the artist has indulged in of applying natural products with suitable surroundings to create the full beauty of nature in both form and color.

The skill in utilizing such products as compose Marine Mosaic has been acquired only by close application and long experience. As with all pure art, new ideas are received through inspiration coming from the medium used.

The transcendent beauty of Nature cannot be equalled by artificial products. Craftsmanship is the key-note of Marine Mosaic. The first method pursued in its construction is that of fixing definitely the subject to be rendered. Second, the composition of line regardless of color, and finally the color scheme which necessarily has its limitations and must so fit the subject within these restrictions of tone and color as to enable the ensemble to appear clear and, at the same time, harmonious. Through this procedure the craftsmanship enters to the greatest extent. This course once accomplished, the artist designs his scheme, seeking Nature for the inspiration or motive. Carefully constructed sketches of separate detailed parts are drawn; be they ship, fish, flowers or landscape. Patterns are then made, according to which shells, stones or glass are cut or fitted. The full size drawing is then



An adaptation to garden decoration

placed under the plate glass upon which the Mosaic is to be built, in much the same manner as a well-sketched design is placed on the canvas of a decorator. Then the component parts are placed together as the painter places his pigments. Herein much depends upon the free and easy placing of materials in securing effect, quite the same as brush work counts in technique. From this point onward until fully completed, the effect of light penetration through his work is denied the craftsman owing to the method of procedure thus far discovered, and one has to work in the dark, as it were, by knowledge alone.

When these many parts are assembled, cemented and sufficiently hardened, the whole is raised to the light and any discordant tones or colors must be removed and others refitted, thus forming by skill and study an harmonious whole.

By long experience and practice the artist is enabled to know well his medium and to utilize it as the painter his color, or the musician his instrument. Herein lies the secret of a successful scheme, for in addition to the mere color, the artist must deal with density of same color and the facts of clear or opaque medium to render the effects desired. Thus experience and practice make the completion of the Mosaic picture a matter only of time.

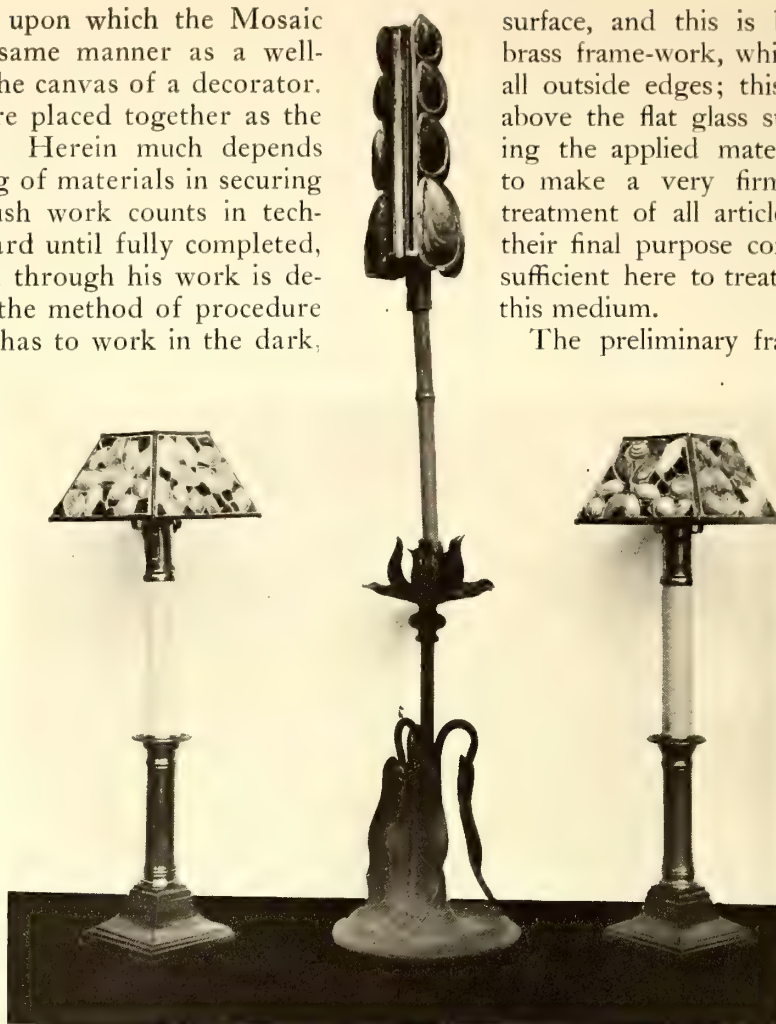
The cement used in the practical work is a lead compound known only to the artist. It is used in a semi-soft state into which condition it may be rendered by heat prior to its setting. When once set, it is impossible to resoften. The lead sets sufficiently well in a week to make it possible to lift the completed work and see the result. To thoroughly harden, making as it does a veritable metallic binding, several months should elapse before it fully attains its true quality of hardness. The cement is applied with tools similar to those used in modelling clay or wax. Various-shaped instruments are required to meet the desired effect to be gained.

All Marine Mosaic is made upon sheets of thick, clear glass, always of a flat

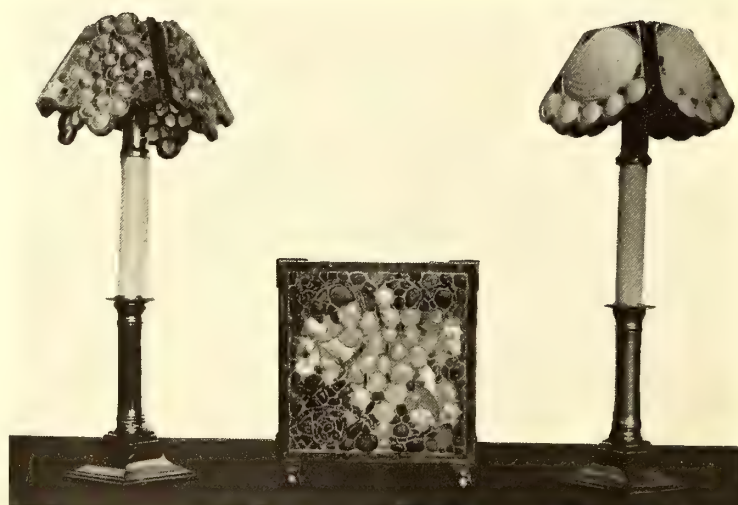
surface, and this is bound by lead, iron, copper or brass frame-work, which binds the applied Mosaic on all outside edges; this frame-work always being raised above the flat glass surface so as to permit its holding the applied material, and is an added precaution to make a very firm and lasting work. The final treatment of all articles in Marine Mosaic relative to their final purpose comes under another head, so it is sufficient here to treat only of the practical working of this medium.

The preliminary framed panels are then placed in their respective ornamental settings. All articles appearing curved are in the beginning made upon flat surfaces so designed and put together in their individual frames and the design of Mosaic applied is so chosen and selected that the thickness of material used really molds the outside surface, thus giving the impression of a curved article. For instance, in a lamp dome, it will be constructed of a twelve-sided base, more or less, and then upon this polygon, instead of a circle for a base, truncated triangles of clear glass frames are welded together, thus forming the flat surfaces upon which the Mosaic is to be rendered. In the centre of each panel or side, a heavy or thick medium is chosen, while toward the outer edge more delicate selection is allowed. In rendering effects of curved surfaces, the artist has to plan his design, his metal frames, the material to be used and color scheme, all to come into one practical and well-balanced ensemble.

The medium adapts itself wonderfully to the effects of perspective which is to a great degree lost in stained glass. In Marine Mosaic, this effect is produced by the gradation of density and by selection of sizes of one particular medium. For example, if a distant sea view is desired, the glass selected for the predominating color is so chosen that the gradual increase or diminution in size gives the unusual effect of distance by the graded density of tone. Again, if distant



Candle and electric light shades



Fairy Screen and candle shades



Magnolia cup, electrica

Fruit dish, grape pattern

land is to be depicted, a graduated selection of pebbles of the color desired will render the effect of perspective by its increase of color tone and size of the material utilized. There may be called for still another effect in perspective, such as the long flat surface of a walk, as suggested in "The Garden," as here illustrated. Instead of one flat piece, as would be rendered in stained glass, this in Marine Mosaic is composed of selected sized pebbles, which makes the monotonous effect interesting by the gradation of lead line and mosaic utilized. The adaptability of natural shells to form innumerable effects is very marked. The sun shell furnishes the body for the sun fish; the tortoise shell, the beautifully traced wings of butterflies; the pebbles in various colors unusually marked, offer unlimited varieties of both wings and bodies for insects, which form a greater part of the natural effects adorning the beauties of the landscapes. Fruits and flowers in gorgeous profusion are composed of both pebbles and shells, while in the more sombre tones are found ready material for the branches of trees, long stretches of shore and beach and rugged cliffs and hills. The beautiful pearl Oyster and Abaloni shell supply wonderful touches for sky effects and especially so for foliage.

Marine Mosaic has been successfully utilized to a great extent in interior yacht decoration, being thoroughly appropriate for things nautical. Unusual effects secured are also most fittingly applied to trophies for aquatic sports, and here may be found charming vases, cups, and other articles of artistic merit and unique design.

Decorative bits for din-



Fire screen, "The Garden"

ing-rooms yield gracefully to Marine Mosaic in forms of fish, fruits and flowers. Sea-shore homes are beautified by the addition of a touch of Marine Mosaic, either a piazza lamp, a garden lantern, unusual and attractive, bringing into play among Nature's wealth of flowers and foliage a reminder of the beauties of the deep, or a beautiful window giving a suggestion of the sea.

An example of Marine Mosaic in form of dish or cup adds greatly to the attractiveness of a well-appointed table and is a most fitting touch of artistic decoration, while these electrically illuminated furnish the effect produced by candle shades, and at the same time is a useful receptacle for fruits, flowers, solids or liquids. This adaptation of Marine Mosaic, for table service, is entirely new and novel. Candle shades, tea and chafing-dish lamp screens are most practical, being at

the same time very ornamental and useful, more permanent than any other medium, for they stand heat and are inflammable.

The uses to which Marine Mosaic may be applied as features of decoration extend the field of opportunity, permitting originality of conception in a wide sphere for experimental work, and leads one to enumerate its many possible advantages.

New as marine mosaic is as a decorative art it is already

apparent that it has a large and interesting future before it. It is not only capable of many interesting applications, but it gives to forms otherwise familiar, a new and gracious art. Old colors take on new hues; old forms seem embellished and vitalized; familiar combinations appear freshened.



Iris Cup



Electrolier, "Apple Blossoms"

A Colonial House

The Residence of L. F. Rhoades, Esq., at Nutley, New Jersey

By Robert Prescott



WHEN Charles E. Birge, of New York, designed the house for L. F. Rhoades, Esq., he accepted the old New England Colonial house for his prototype. This style of house lends itself to the use of the broad-hewn shingles of the Eighteenth Century period. The foundation is built

of stone; the superstructure is built of wood, with the exterior frame-work is covered with matched sheathing, building paper, and split shingles, laid ten inches to the weather. These shingles are left to weather a natural silver gray color, while the trimmings are painted a soft gray, and the blinds an apple green.

The front entrance is reached by a narrow walk, edged with box, and extending from the street to the cement steps placed before the front door. The charm of the entrance lies in the beautiful design of its door and facings. The trellis built at either side of the entrance with openings for the windows at either side of the door, carries out the Colonial effect so earnestly sought. An attractive feature of the house is the pergola effect and living-porch built at the rear of the house.

The hall is placed at the front of the house, and is trimmed with English fumed oak, in a dull finish.

There is a staircase of handsome design, with broad landings, extending to the second story. A hat and coat closet is provided underneath the stairway. The walls of

the hall are covered with a tapestry wall-paper, in a foliage design of brown and green. Soft white madras curtains are hung at the windows. To the right of the hall is the living-room, extending the full depth of the house. It has a two-toned, green-striped wall-paper on the walls, and is trimmed with English fumed oak, in a dull finish. The fireplace has Harvard brick facings, laid with wide joints in white mortar, and a hearth laid with red Welsh tile. The

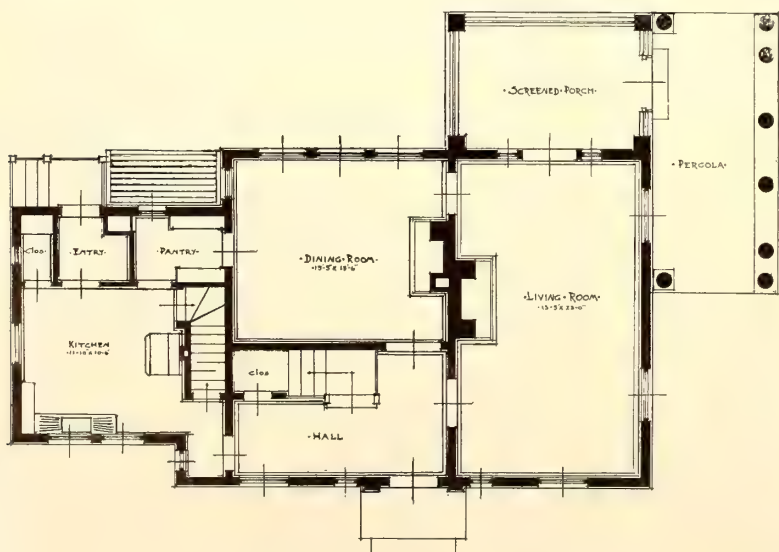
mantel is also of fumed oak and is designed in a simple manner. French windows lead from the living-room to the living-porch at the rear of the house, and by this device a decorative structural effect is obtained. There are two doors in the centre, opening in opposite directions, while at either side of which windows are built. The remaining space between the opening and the outside walls of the room is utilized for bookcases which are built in. The windows have curtains of white madras, hung loosely from a brass pole.

The dining-room is reached from either the hall or the living-room and is built at the rear of the house, facing the garden. It is trimmed in Flemish oak, finished in a dull tone. There is a panel wainscoting, obtained by the use of oak battens, extending to the height of six feet from the floor, at which point a plate rack is built, extending around the room. The panels

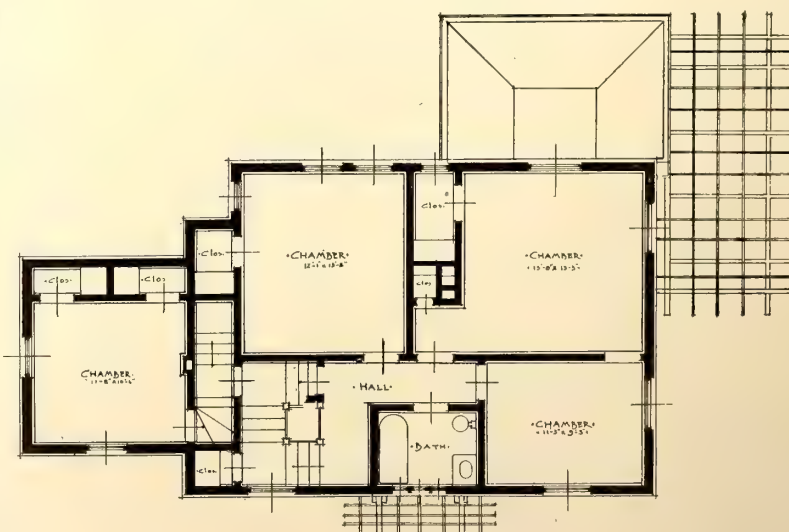
formed by these battens are covered with a brown burlap, while the space above the plate rack is covered with a paper of the Fontainebleau design. The ceiling is beamed,



The charm of the entrance lies in its classic design



First floor plan



Second floor plan

forming deep panels, which are tinted a yellowish-brown color. The fireplace is built of Harvard brick, with a hearth and facings of the same. The facings of the fireplace extend up to the height of five feet, at which point they are finished with a mantel shelf on a level with the plate rack. A door opens in the butler's pantry, which is furnished with dressers, drawers and sink. Another door opens into the kitchen, which is provided with a range, sink, dresser, pot closet, and a lobby large enough to admit an ice box. This service end of the house is trimmed with cypress, finished natural. The stairway from the kitchen leads to the servants' room, built over the kitchen extension, thereby isolating the service end of the house from the living quarters of the family. The main part of the second floor contains three bedrooms and a bathroom, all of which are treated with a white painted trim, with doors finished in mahogany. The walls are covered with striped



The New England farm house is the style adopted for the exterior of the house



The living-room is trimmed with English fumed oak and is provided with a two-toned green striped wall-paper

wall-papers, in Colonial effects. The windows of each of the bedrooms are hung with white madras curtains, over which are hung cretonne curtains of Colonial design. The bathroom has a tiled wainscoting and floor, and is furnished with porcelain fixtures provided with exposed nickel-plated plumbing.

The cellar contains a laundry, fitted with porcelain trays, a cold-storage room, and a steam-heating apparatus, and fuel-room. The living-porch built at the rear of the house, provides a place which is screened in summer, and is enclosed in glass in winter, and used for a sun-room. This living-porch is a very necessary adjunct to the country house, for it provides a place, which may be furnished as a room, and also a place in which one may sit in the winter. Much planting has been done about the house and grounds, softening the lines of the house, and the site on which it is built.

The third floor contains two bed-rooms and a trunk-room.



The dining-room is finished in Flemish oak with batten wainscoting and plate rack



Another view of the living-room showing the open fireplace built of red brick



Two views of the pergola of Mr. Rhoades's house with its vines showing the purpose for which they are intended

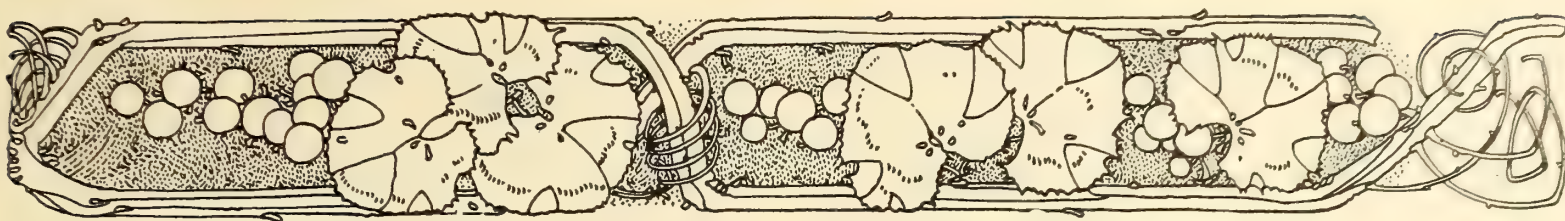
The Quebracho Tree of South America

THE quebracho is a tree of South America (Argentine Republic), where it forms entire forests, but nevertheless has been, until now, almost completely unknown. Its use is now beginning to spread among tanneries, and for two reasons: First, its high content of tannin, which amounts to 18 to 20 per 100 pounds weight of wood and bark; second, the discovery of chemical methods of treating the extracts, which facilitate the employment thereof. It was a German tanner of Buenos Ayres who was the first to find that extracts of quebracho wood were able to tan hides; but the first sample of the wood was carried into Europe by way of Havre in April, 1875, by Dubosc, who undertook the industrial manufacture of the extract. The employment of the extract developed difficulties consequent upon the peculiar property of the tannin. When one extracts the tannin from the bark by boiling water, the solution deposits on cooling the insoluble tannin, while there remain in solution soluble tannins and the glucosides, or non-tannins. These three components operate during the tanning, the soluble tannins combining with the fundamental substance of the skin, the non-tannin fermenting and giving the acids, which are necessary for "plumping" the hides, and which facilitate the absorption of the tannin; the insoluble tannins finally pene-

trate uniformly into the pores and render the hide impermeable. The quebracho is composed of 20 parts of soluble tannins in 100 parts, and only 2.5 of non-tannins per 100, while it does not contain any glucosides; it is therefore not able to furnish enough acid by fermentation. But if one adds thereto acid liquors resulting from other extracts, there is produced a precipitation of soluble tannin, which renders the tannin process very difficult.

Attempts have been made from the first to eliminate the insoluble tannins by addition of lead acetate, alum, albumen, etc., and to thus obtain a clarified and decolorized extract, but these attempts have not solved the problem. After that endeavors were made to render the insoluble tannins soluble; two Italian chemists, Leptit and Tagliani, found that by a treatment with alkaline bisulphites, the non-soluble compounds were able to remain in solution and also in the acid liquors. This process, patented in all countries, has made feasible the universal employment of quebracho. In the United States there was employed in 1901 not more than 5,000 tons of extracts; in 1907, six years after the discovery of the bisulphite process, 50,000 tons were consumed, in 1909, 70,000 tons. The extraction is effected *in situ*; on the Parana River is found a plant producing 50,000 tons per year.





Furnishing the Flat

By Lilie Hamilton French

I—THE HALL



NO ONE need expect to find in a flat, a hall of any architectural importance. It is generally a purely utilitarian affair, at its worst when presenting a long, bare stretch running from a parlor in front to a rear dining-room. Such a hall is always awkward, especially when dinners are given, and in its arrangement are confronted the most difficult of all decorative problems. In the halls here shown the passage-way is dark and lighted only from adjoining rooms. The only advantage over those which are oftenest seen, lies in the lay-out of the flat, with the dining-room and parlor opening into each other at one end, the front door at the other. This arrangement gives one an opportunity for considering that most important question of vistas, an impossibility in the narrow winding way of the everyday flat.

Vistas include not only the approaches to an object, but the character of that object itself. The eye is constantly at work, and must never be shocked. Not only must it be satisfied on the way, but it must be made to rest agreeably on that to which it is led. Take the illustration, Figure 3, showing the doors of the dining-room as open, two front windows facing these. Anyone entering the apartment and looking straight at these windows, would experience an uncomfortable sense. The mistress, realizing this, has endeavored to do two things: first, to soften the light, not only by curtains but by flowers in the window, changed for the different seasons and always studied in their relation to surrounding colors. Secondly, to break up the straight lines, grouping objects so that while one gets the feeling of composition, one escapes that of a heavy massing. It will be seen that the fireplace breaks the line in the dining-room, Figure 3, the subordinate lines being broken by the uprights placed upon it. In the hall the divan is not presented as an unbroken stretch, as a vase of flowers, on

a pedestal, stands at its end. The table in the foreground of the illustration, again, has upright objects on it, their mutual relations having been well studied. Thus, the brass hanging lamp, with its tassel, comes down to meet the palm in the brass milk can, while around it books and flowers break up the flat surfaces. In this way not only are straight lines broken, but a vista is arranged, but without sacrificing the light, as one would have done who used a screen in place of the table, in order to provide privacy to the divan,

otherwise in full view of the front door. A screen, too, at the end of a vista would have accentuated the upper light of the window, which would be unpleasant and make a special study of that light a necessity.

If objection is had to a Dutch milk can for a drawing-room table, its defence can be urged in a plea for its color, which harmonizes with the other brasses in the room, especially with the lamp over it, and again in the fact that when the flowers are placed near by, white roses with their green leaves, for instance, the reflections are so pretty that the can makes its own excuses, which most people are glad to accept.

If one looks at the hall shown in Figure 2, one will see that the same general laws have been observed. As the plain door is ugly, and yet must be confronted by outgoing visitors, it is hung with a picture framed in brass. The picture itself has its high light accentuated, so that the eye is more or less allured. This would not be the case were, say, a photograph of

Rembrandt shown, which as a dark object would have no place there. One would instantly feel, too, that the picture had been robbed of its proper dignity, being an object to be studied in tranquility, not to be glanced at while making an exit. Neither would a mirror do, since it would be deceptive and cause embarrassment to near-sighted people.

Books do not rightfully belong to halls, and are only excusable when limitations of space make them a necessity. Here their shelves break up the long lines, and since they



Figure 1—A green and white striped paper covers the walls of this hall and gives an air of refreshing coolness the same as the dining-room on which it opens



Figure 2—Books do not rightfully belong in a hall and are only permissible when limitations of space make them a necessity

are unpretentious they are at least dignified. A carpenter made and stained these for \$12. The Dutch clock also breaks the line. One can be had from \$25 to \$50, but needs to be wound twice a day. Yet it is so companionable and decorative, and the slight trouble involved in winding is really a pastime. The small hat-rack cost 75 cents, and because unobtrusive, is greatly to be preferred to those ugly uprights having seats, hooks and bad mirrors.

Yellow is the color of this hall, the hangings being of green denham, easily washed and shaken. Yellow gives light, suggests sunshine, and was chosen because the hall was dark. It blends agreeably, too, with that of the adjoining rooms, where low-toned greens are prevailing. The importance of considering the colors of adjoining rooms has already been touched upon, but bears a slight repetition, since it can be readily seen that no room opening out of this hall could be done in a jarring tint.

A green and white striped paper, like that running through all the halls of the Colony Club, covers the second hall, in Figure 1, here shown, and gives at once the same air of refreshing coolness already observed in the chintz drawing-room on which it opens. One will notice, too, the same reserve. Here all the books are grouped in shelves around the steam radiator, and this brings me to another uncomfortable problem—that of concealing these ugly affairs. Even in new apartments renting for thousands the same problem exists, and the astonishment grows that architects have done so little for the tenant. In small apartments the tenant must do for himself, but there is no excuse where the larger ones are concerned, and where heat may be introduced around the baseboard. As can be seen in the illustration, the shelves about the radiator conceal it. The upright lamp, too, helps to make a composition and, as it is lighted by electricity, the presence of the lamp is not objectionable.

Very much the same plan has been followed in the other

halls, except that in one instance a mirror is hung over the shelf, which is set out with brass. The mirrors' reflections beguile the eye, carrying it away from the heater. The brass candlesticks, too, have their proper place there, since on dark afternoons they are lighted. When the dining-room is crowded the serving-table is placed in front of the radiator, an arrangement so frank that no shock ensues.

It may be as well, perhaps, just here, to give two or three other suggestions for the treatment of the radiator. When, as it often does, it comes in front of a window, a box seat may be built over it, furnished with cushions, which at least are comfortable in summer. Or the seat may be left uncovered, and set out with plants requiring much heat, the massing of the greens against the light being most effective in some apartments. A more expensive device is that of a regularly fitted brass cover with latticed sides and top permitting the heat to escape, and finished with a well-designed border. This, though not concealing the heating apparatus, gives it a certain dignity, although nothing quite excuses the whole system of upright radiators. Still another way is that adopted in the Colony Club. There a French dining-room would have been utterly ruined had the radiator been left to proclaim itself. The problem was solved in this way. The heater was covered with what looks like a cupboard with doors, the panels being made of wire screening painted gray-white like the wood. Behind the screening hangs thin pink silk curtains to match the room. This is an inexpensive arrangement which any clever man about the house, with a gift for designing, can do for himself. Instead of the wire screening, he could buy caning, like that used on chairs, and paint it. That which makes the special treatment just quoted, however, so clever, is the fact that the decorator balanced the pretended cupboard with a real one of like design, placed under the corresponding window, filling it with china. One is cautioned not to imitate this French design without studying



Figure 3—The doors of the dining-room are open with the two rear windows facing them

the environment. It would have a proper place in the hall with green and white-striped paper, because the whole apartment is more or less French. It would be a silly affectation in the hall hung with brass.

It will be noticed that in one of these halls a brass lantern hangs from the ceiling. This is furnished with a candle and cost \$16. I refer to it in order to call attention to what may be done with lanterns in halls. Now and then, for instance, an old ship's lantern is found in an out of the way corner, and when gas, which is never agreeable, is used, the pipe may be made to run up through a hole pierced in the bottom of the lantern, which is hung by a chain to the ceiling. The flame then never flickers, and one gets the always delightful impression of an original idea well executed. What is better, the idea is one perfectly possible to put into execution by one's self, provided the environment makes it permissible. In the green and white hall an exquisite Venetian lantern with glass sides has been used, electricity being introduced into it, but such a treasure is only to be found for the fortunate.

In the third hall, Figure No. 5, the colors are a buff and white, which makes an easy transition into the other rooms, furnished in golden brown and buffs. From the shelf over the radiator a bit of silk is hung to conceal it, the radiator being used now and then for drying on a wet day. Thus it



Figure 4—Another scheme for concealing the radiator with a silk cover



Figure 5—An unique way of concealing a radiator by the use of a wooden shelf

will be seen that though no practical necessity has in any case been ignored, every effort has been made not to make the disagreeable obtrusive.

The illustration shown in Figure 8 is that of a hall furnished with a French gray and white paper. It shows the possibilities of utilizing a small corner of the hall with a hat table over which is hung an antique mirror. The table forms a stand for the card tray, which should always be at hand near the front door.

The hall shown in Figure 6 is similar so far as the hat table is concerned, but it presents a very artistic treatment for the door leading from the hall to the drawing-room.

Wall-covering of a medallion pattern of the soft colors of brown, blending with the soft brown tones of the trim and the furniture with which the hall is furnished, is the scheme of the hall shown in Figure 7.

The illustration shown in Figure 3 presents an attractive feature for a hall in providing it with an old Empire sofa and tables when the space will permit.

The windows opening on a shaft permit an artistic treatment and are hung with soft draperies.

Miss French will take up the drawing-room as the next subject in her series of "Furnishing the Flat," which article will appear in the February issue of AMERICAN HOMES AND GARDENS.



Figure 6—A card table with its folding leaf against the wall is the feature of this hall



Figure 7—This hall is designed in the mission style with furniture and trim of the same style



Figure 8—A corner of a hall allowing space for a hat table and with a mirror over the table.

Flowers All the Year Round

How the Lily of the Valley May be Grown at Any Time of the Year

By S. Leonard Bastin



THE modern household fresh flowers are an essential feature of almost any scheme of decoration. Unfortunately, it is only those who live in very favored climes that can look to find blossoms in the outdoor garden at any season of the year. The horticulturalist of to-day, however, is nothing if he is not progressive, and he has not been overcome by the difficulties which surround the producing of blooms during the winter time. By means of artificially heated structures the twentieth century gardener has been able to keep going the supply of floral loveliness, even when the sway of King Frost is firmly established over the land. With the coming of the system of retardation, the possibilities of plant growing have been carried even further still. Most people must now be familiar with the method of keeping roots and bulbs in refrigerators over their natural blossoming time, and in this way preventing them from starting into growth. By these means the development of the specimens may be suspended for several months, for it is not until the subjects are brought out into the light and air that any attempt is made on their part to make a start. The plants so treated do not seem to be in any way the worse for their unique experiences.

Until very recently the handling of retarded plants has been regarded as a matter of interest to the professional florist alone. Strangely enough the general public has been slow to realize that the discovery is one which especially appeals to the private individual. This is particularly the case with one plant—the Lily of the Valley, which has shown itself to be an exceedingly easy subject to manage. It is safe to say that the fragrant white spikes are to be numbered amongst the most valued of flowers, and the news that anyone in an ordinary living-room may grow these treasures for himself will come as a pleasant surprise. One can hardly insist too much upon the fact that retarded roots

do not require a great amount of heat; after the long-deferred growth the plants seem to be ready to burst into foliage and flower as soon as they are removed from the cold of the refrigerator. Retarded Lily of the Valley "crowns" (as the roots are technically called) may be purchased from any garden store, although a small dealer may have to order specially. When removed from the cold storage the plants are so eager to grow that they cannot well be kept in stock for a long while. It is important to go to a good business house, as unreliable firms will at times try to sell immature "crowns" to the novice. These cannot all be relied upon to bloom. In a general way the purchaser may tell whether he is buying the flowering size by the appearance of the pink buds.

Those which contain a blossom are blunt at the ends, whilst the "crowns" which contain only leaves are sharply pointed. Buy in small quantities and fairly often so as to secure a succession of blossom.

The Lily crowns are usually sold tied up in bundles and it is necessary that they should all be carefully separated. Do this with care so as to avoid injury to the brittle roots. Although not an essential feature of the treatment, it is a good plan to spread the crowns on trays in a single layer, and place them in a dark



Lily of the Valley crowns as they are purchased

cool place for a couple of days. If during the winter, it should be ascertained that the temperature of the apartment is well above freezing point, for the object of this part of the treatment is to ensure that all traces of frost are removed from the roots before active growth is encouraged.

This slight delay at the start will induce an accelerated development later on. The next step will be to consider the question as to what we shall plant our crowns in. Ordinary pots will answer the purpose very well, but as a rule it will be found that the most satisfactory receptacles are shallow wooden boxes; these accommodate the thick masses of roots particularly well. It is much better not to attempt to grow the plants in ornamental vases which are ill-fitted to contain the roots. The specimens may be easily



The first day

removed without injury just as they are coming into perfection, and placed in any pot or jar which the fancy may dictate.

Lilies of the Valley are especially easy to cultivate in that they will grow in almost anything. Indeed, it is doubtful whether it is not the best plan to abandon the idea of planting them in soil at all. This material is dirty and undesirable to have about a living-room, and a far cleaner, and in every way more satisfactory medium, will be found in the coco fibre. This retains the moisture well



The fourth day

and in its consistency is peculiarly easy for roots to penetrate. For use in connection with lily planting the fibre should be in a damp condition. First spread the stuff in a thin layer over the bottom of the box; then take each of the roots singly and place them one by one in a row at the end of the receptacle. Arrange so that the pink shoot is quite upright and the roots trail away along the bottom of the box. When one row is finished, bed it into place with fibre and then start to put in position the next row, and so



After a week's growth



The tenth day



The thirteenth day



Ready for market

on until the available space is fully planted. As a final step work in fibre over the whole of the planted area so that there are no holes, ramming the material in tightly with the fingers. If a very rapid development of the Lilies is desired it is important that the early stages of growth should be carried on in the dark, or at least in a dense shade. Removed from the action of strong light the stalks will elongate at a great pace if a suitable temperature is maintained. As has already been indicated, it is quite a mistaken idea to attempt to force retarded Lily crowns by the application of strong heat. This treatment will really do no good to the plants, and if carried too far may easily harm the specimens—as many a grower has found out to his cost. The

most suitable temperature to apply to the plants is that which the Lilies would experience if they should come to perfection at their natural time about the month of May. A nearly similar degree of warmth is to be found in any room which is comfortably heated for occupation during the winter.

After four days in the darkness, the box containing the growing Lilies may be brought out into the light. It will be noticed that the shoots have extended considerably, and in some cases may even have started to open up their leaves. Do not immediately place the plants in the strong light, but bring them by stages under the influence of the illumination in front of a window. At no time in the growth of retarded Lilies is the admission of sunshine desirable, in that

curiously enough, the bright heat appears to make the plants droop. Great attention should now be paid to watering the specimens and they should never at any time be allowed to suffer from lack of moisture.

If the light is all coming from one direction, as will be the case when the Lilies are in front of a window, the box should be turned round daily so as to prevent the stems from leaning over too much to one side. If all goes well the rate of growth should now be considerable. At the end of the first week the spikes will have run up to a good height, whilst by the fifteenth day the flower buds ought to be well in view. Indeed, under very favorable conditions Lilies of the Valley have been grown to their full perfection in the short space of seventeen days. In a general way the grower may reckon that

his blossoms will be ready for plucking in about three weeks. During the last few days the foliage will benefit by an occasional sprinkle of water, although this should be discontinued when the flower buds have opened at all, as the moisture will damage the delicate blossoms. In gathering the Lilies it will be found advisable to cull them when the spike of bells is about half-expanded. In this way the blooms will keep much longer in water than if they are left until fully open.

Retarded Lilies of the Valley may be cultivated at any time of the year, and it is not an unusual thing even in the summer time, to find the charming white flowers exceedingly useful. On special occasions, such as weddings, there is no blossom quite so suitable for decorative purposes.



Gathering the lilies

An Electrical Household

By Jacques Boyer



THE house which has just been fitted up in the heart of Paris by M. George Knap, of Troyes, is the last and most perfect illustration of modern comfort; and although a household of this character is not within the reach of everyone, its originality well merits description.

After having opened the door, by pressing a button, and confided to the telephone the object of our visit, we are conducted to the dining-room. If a meal is being served, we are surprised to see no waiter moving around the room. The servants remain in the kitchen, and send up every dish at the proper moment. In the dining-room is a switchboard with electrical measuring instruments and the necessary keys and commutators. The function of each key is inscribed above it, in order to diminish the chance of error, and a large bipolar commutator allows the switchboard to be cut off from the illuminating circuit. Various combinations of lights can be used according to circumstances. A large ornamental piece and dishes of fruit adorn the central part of the table, which is strewn with roses in which tiny electric bulbs are concealed. This central portion is surrounded by an oval groove, which leads to the two silver-plated doors which cover the entrance to the electric elevator. The area

devoted to the plates and other utensils of the guests is bounded by low parapets of glass and silver. Below the table nothing appears except two nickel-plated bars which serve to guide the elevator, which is placed in the basement directly under the dining-room. One of these bars supports the mechanism which operates the elevator and the crescent-shaped doors above it. On the table, beside the host, are four push buttons. When all the guests are seated, the host presses the white button, which causes a little drum to beat in the kitchen. Immediately the doors of the elevator shaft open, the soup tureen ascends to the table, and the doors close and conceal the opening. By pressing a red button at the right or left, the dish is caused to travel around the table in the corresponding direction. It is arrested at any point by removing the finger from the button. Other dishes are served in the same manner. The function of the fourth button is to cause the dish to rotate, in order to assist the guest in helping himself. When the course has been thus served, the dish is brought back to the elevator by the operation of the buttons, and the drum in the kitchen is caused to strike twice. Immediately the elevator doors open, and the elevator descends to the kitchen, whence it returns with the next course, after the plates have been changed.

Let us now take a look at the clean and neatly furnished kitchen. The electric range is incased in wood and marble, so that it resembles a buffet. Attached to it are a switch-board, an electric clock, a rheostat by which the strength of the current and the heating effect are varied, and an ammeter which measures the current employed in cooking each dish. The range contains four separate electric heaters of polished aluminium, which can be operated singly or simultaneously. By means of the electric clock, every dish can be cooked to precisely the proper degree. If, for example, a fowl is placed in the electric oven, it is known from M. Knap's experiments that it will require thirty minutes to roast it by radiation. The electric contact of the clock is, therefore, set at the figure 30, and at the moment when the desired number of minutes have elapsed, the current is automatically cut off, and an electric bell advises the twentieth century chef that his fowl is cooked to a turn.

Milk is automatically drawn into the stew pan, sauces and cakes need merely to be placed on or in the range, and the current does the rest. The cook can go off and smoke a cigarette without risk of burning his sauces or pastry. This method of electric cooking would not be very expensive when the current can be obtained from water power or from the waste power from a large motor.

The electric kitchen contains a rotating table, on which are placed machines for chopping meat, churning cream,

washing dishes, and other apparatus, driven by a small dynamo. Some curious phenomena may be observed in this electric kitchen. For example, eggs are "boiled" without the use of water, and, in contrast to what occurs in cooking

with wood, coal or gas, a fowl begins to cook at the center, and the skin is not browned until the cooking is finished. M. Knap asserts that this method of cooking does not dry out the meat, and gives it a particularly agreeable flavor.

It is stated that one cent's worth of electricity will make four cups of coffee, or cook a steak, or boil two quarts of water, or make a Welsh rarebit, or operate a 7-inch frying pan for twelve minutes, or an electric griddle for eight minutes, or an electric broiler for six minutes.

Near the kitchen is a laundry with electric washing machines, electric drying stoves, electric irons and ironing machines, etc.

In the bedroom we find other novelties. The hot-water bag or bottle is replaced by an electric bed warmer containing a small lamp, which is operated by compressing a bulb which hangs above the sleeper's head. In the morning the occupant of the room has only to press a button, and an elevator concealed in a small table will bring him

his breakfast and his morning newspaper. Finally, "electric spies," distributed in all the rooms behind the wall-paper and the hangings and connected with sensitive microphones, make it possible for the master of the house, by pressing a button without leaving his bed, to know everything that is being done and said in the house.



A bedroom in which breakfast is served by electricity



The electric kitchen



Arrival of the dish on the table

The Residence of Henry W. Schultz, at Kenilworth, Illinois

By Henry Hawley



AMERICA has no distinctive architecture of her own, for it is thoroughly cosmopolitan in its tastes, and adapts itself to the style of architecture of every period and country. The tendency of architects in the designing of a house, to-day, is to follow some classic form, and to imitate and adapt to American requirements a style of building that grew out of the needs of a different people, whose life was carried on under different conditions. Not so with George W. Maher, of Chicago, who is the architect of this splendid house, for he has created a distinctive form and has developed a most interesting style of architecture, which is very delightfully expressed in the charming house shown in the illustrations presented herewith.

The unity of the whole scheme of this building expresses this thought in its lines, forms and proportions which are consistent, and there is very little necessity for its enrichment in ornamental design.

One of the essential elements of beauty in any form is that derived from a sincere and thoughtful study, and when the characteristic of any period is eliminated from a design then a new style is created.

Mr. Maher has been very successful and has been able to

demonstrate that it is possible to build a modern house, meeting all the requirements of a modern family, and at the same time design a building which will in all its parts express a distinct individuality.

The first glance of the house reveals the soft gray color of the stuccoed walls, on which are growing vines, harmonizing well with the grayish-green color of the painted trim and roof. The great surface of the wall space is enhanced by the buttresses built at each corner of the house with their forms receding from their starting point at the grade line to the under side of the eaves. The wide eaves and the windows and door casings are stained a soft grayish-green. The generous size of the front porch and entrance door with full panels of leaded glass, and the windows also of leaded glass built at regular intervals across the front of the building give a pronounced character to the design of the house.

The floor plans explain the interior arrangement, which is quite complete for convenience and it comprises all the very best appointments to be found in a well-regulated house. The lower floor is divided into a hall, built in the centre of the house, a large living-room extending the full depth of the building, a dining-room, living-porch, and kitchen, while the second floor is comprised of sleeping



The front of the house is expressive of a distinct style of architecture

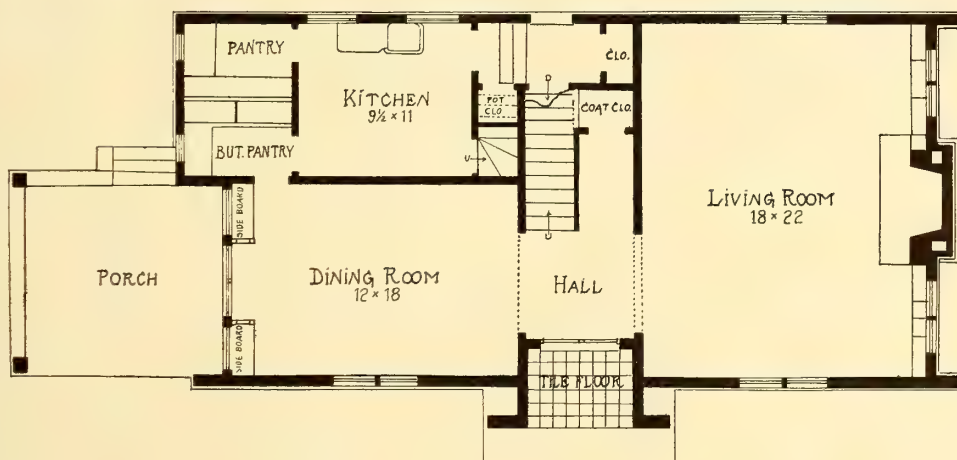


Another view of the house showing the piazza enclosed for dining uses

rooms. The hall is trimmed with fumed oak, with the walls of rough plaster, tinted an orange yellow. A moss-green carpet is stretched over the stairs, and green velour velvet portieres are hung at the doors. The living-room built at the right of the entrance is especially well provided with windows, at its front

and rear, and also at either side of the fireplace. This living-room has a fumed oak trim, finished with a forest-green effect. The walls are of rough plaster, and tinted a grayish-green color. The ceiling is beamed, forming panels of rough plaster, which are tinted in a lighter shade of the same green color. The fireplace is built of Roman brick, with facings extending nearly to the ceiling, and containing a glass mosaic panel in the centre of its front. The furniture of this room is also of fumed oak, finished the same as the trim, and harmonizing well with the soft green rug with which the polished floor is covered.

Directly to the left of the entrance is built the dining-room, which is finished in a scheme of autumn colors. The woodwork is of fumed oak, finished in a soft green tone,



First floor plan

while the walls of rough plaster, are tinted a yellowish-brown tone. Soft brown silk curtains are hung at the windows. The oval ceiling and the buffets built in at either side of the French window, at the end of the room, are attractive features. The broad French window opens direct on to the living-porch, which is en-

closed in glass in winter, and screened in summer, and is used for a breakfast-room. The service end of the house is most convenient in all its details, is treated with white enamel paint, and has granolithic floors. The second story is divided into sleeping-rooms, and a den. The latter has a white painted trim, with mahogany finished doors, and rough plastered walls, tinted a soft green. The owner's room, which is directly over the living-room, has also a white painted trim, and yellow tinted walls. The three guests' rooms are finished in French gray, with trim and walls and furniture alike. The bathroom has tiled walls, ceiling and floor, and is furnished with porcelain fixtures, with exposed nickel-plated plumbing. The third floor contains the servants' rooms, storerooms, and bath.



The hall is designed in the same style as the rest of the house



Simplicity is the keynote of the living-room

The cellar is provided with a laundry, hot-water heating apparatus, fuel room and cold storage complete.

A brick walk leads direct to the steps of the entrance porch, built at the front of the house, at either side of which is planted a profusion of growing shrubs. Considerable

landscape work has been done about the house, and a formal garden has been laid at the rear of the plot, reached from the living-porch.

A well-kept lawn and garden enhance the appearance of the house and carry out the sought-for scheme of consistent landscape work.



Autumn colors is the scheme used for the dining-room

Painting Concrete Houses

By George E. Walsh



ONE of the advantages claimed for concrete houses is that the cost of repairs are slight from year to year, and that the exterior surface does not require frequent painting to protect it from the elements. For this reason concrete residences by the seashore, where the strong salty air quickly destroys ordinary paint and rots the wood, have grown into popular favor the last few years. Apparently the harsh sea-air has no visible disintegrating effects upon the concrete surfaces. This strong feature of concrete structures carries with it one disadvantage which has caused an endless amount of discussion and experiment. Concrete surfaces, while proof against weather conditions, present such a monotonous color that from an artistic point of view many object to using the material for their homes.

But for all that we have the dull blue-gray of ordinary Portland cement which offers little variety in effects when compared with the red and buff of terra-cotta or the clear white and warm gray of marble and granite. To secure the highest artistic results in concrete residences, therefore, builders and architects contend that we must have variety in color.

There are two methods adopted to secure colors in concrete houses. One is to mix coloring ingredients with the cement which will present lasting qualities, and the other is to paint the exterior surfaces with some paint which will give somewhat similar results. The mixing of different colored sands with the cement to get color-schemes, and the adding of certain oxides to the mixture to intensify certain shades are still in the experimental stage.

The difficulties in the way of applying colors to the exterior after the concrete house is finished are somewhat similar to those which apply to exterior painting of frame houses. The weather affects them and necessitates repainting at intervals. The use of lead and oil paints is not of lasting quality. The alkali of the cement has an affinity for linseed oil, and in time the oil oxidizes and causes the paint to peel off or dust.

Experimenters have realized for years that the ideal paint for concrete houses must be something more than a thin film. It must be a composition that will penetrate the surface and fill pores so that firm adherence can be obtained. A paint composed of color-pigments with ground cement as the base gives good results. The light chemical oils used are intended to dry out after performing their function of bonding the cement base to the concrete surface. The cement base thus becomes a part of the wall and holds its color indefinitely.

When nature in the form of wind, rain and sunshine has neutralized the alkalies of the cement, it is much easier to paint the exterior structure and secure more durable results. Consequently, it is unwise to figure upon having a stucco or concrete house painted when finished. If this is intended, the highest results cannot be expected. Old concrete houses that have stood exposed to the weather for a year or two are in much better condition for the painting. The new house painted can not undergo the same aging process. The film of paint is waterproof, and hence checks the process of neutralization of the alkalies in the cement.

If the house has had an opportunity to dry thoroughly the question of painting the exterior surface to get another color can be considered with hope of success. Nearly all

of the different methods of applying paint to cement surfaces have been tried on new houses, and the experiments were conducted with the fresh concrete or stucco in view. Therefore, all of these apply with greater force to the houses which have been allowed to stand a year or two and dry out.

One of the earliest processes was to treat the cement surface first with a wash to clean the surface and neutralize the alkali. Diluted muriatic acid or hydrochloric acid of seven to eight per cent. mixed with clean water composed this wash. After treating the entire surface all dirt, grease and other substances were removed, and the neutralizing of the alkali of the cement was hastened thereby. But, unfortunately, if the cement contains much lime, which is very commonly the case, the muriatic acid would tend to neutralize the lime and convert it into calcium chloride. This would prove most injurious to the cement surface. It would crumble and pit the surface, and when paint is applied to such a surface it would have a very uncertain foundation. Any application of such a wash to the cement, therefore, means disintegration of both the surface and the ordinary paints. In the use of muriatic acid as a wash, and also sulphuric acid, which some have employed, an excess of acid is supposed to be washed off before the paint is used, but in spite of this the acid generally does injury to the surface.

There is a method called the zinc sulphate, which gives much better results than either of the former applications and its cost is less. When the cement has dried properly an application is made of a zinc sulphate and water of equal parts by weight. When thoroughly mixed this solution is applied over the whole cement surface with a stiff brush. A fine coat is thus formed, which at the end of two or three days dries hard and firm. The zinc sulphate changes the caustic lime of the cement into calcium sulphate or gypsum, and zinc oxide is deposited in the pores of the cement.

Zinc sulphate is one of the most important of the white paint pigments, and when paint is subsequently applied, this becomes incorporated with it and gives lasting and durable qualities. The zinc sulphate has no known injurious effect upon concrete or cement surfaces, and consequently there is no disintegrating chemical change set up. This method of treating cement surfaces to prepare them for painting has been used successfully on a great number of private and public buildings. In preparing cement surfaces for painting consideration must be observed as to the effect the first application may have both upon the cement and the paint. The strong acids that destroy the cement can not be recommended anywhere.

There are several other methods of preparing cement and concrete for painting, so that durable color-effects can be obtained, and some of these have given excellent results. One of these is to coat the surface with a solution of ten pounds of carbonate of ammonia to 45 gallons of water. The solution is applied with a brush once and left to dry. Insoluble calcium carbonate is formed on the cement surface, and a large amount of ammonia is liberated. This leaves a perfect surface for painting. Where mortar containing lime is used in building a stucco house, it is better to use two weak solutions of this mixture rather than one strong solution. The surface of cement is not injured by this wash.



“Low Gables”

A Summer Home at Sound Beach, Connecticut

By Burr Bartram



THE illustrations shown herewith present “Low Gables,” a summer home erected for E. J. Lucas, Esq., at Sound Beach, Conn.

The long lean-to roof and the twin gables are the attractive characteristics of this house, together with the field stone underpinning, the balustrade and columns. The superstructure is of wood and the exterior frame-work is covered with old-fashioned shingles of cypress which are laid twelve inches to the weather and left to weather finish. The trimmings and blinds are painted a dark green. The roof is covered with shingles.

The plan shows an entrance which opens on to a broad landing from which the stairs to the second floor ascend, and from which a short flight of stairs descends into the living-room.

The living and dining-rooms are treated in the Mission style, with chestnut woodwork treated in a soft brown color and with furniture and furnishings to harmonize. The floors are of hard wood and the ceilings are tinted. Each has a

wainscoting and the living-room has a beamed ceiling. The dining-room has china closets built in each corner. The butler's pantry, kitchen and laundry are trimmed with hard pine, and each is provided with all the best modern conveniences. A bath house with shower is also provided in the kitchen end of the house.

The second floor is treated with white enamel paint, and contains five bedrooms, two bathrooms, besides two bedrooms for the servants, which are reached by a private stairway. The bathrooms have tiled wall and floors and are furnished with porcelain fixtures and exposed nickel-plated plumbing. The decorative features of the house are quite important.

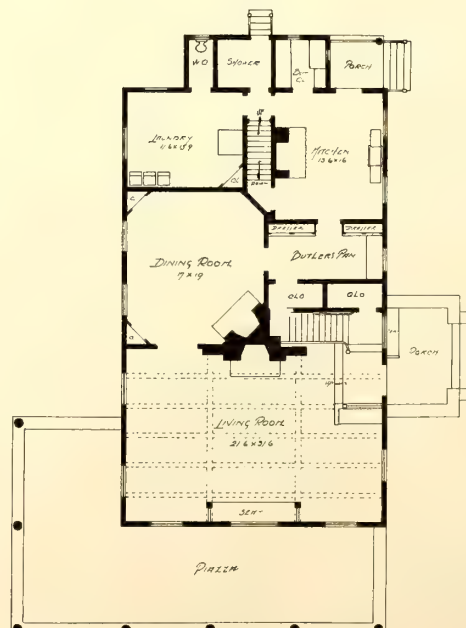
The walls of the living-room are covered with a dull green burlap, while the walls of the dining-room are covered with a burlap of a brighter shade of green, blending well with the darker tint used in the living-room. The wall of the bedrooms are covered with wall-papers of simple design.

The walls above the wainscoting in the bathrooms are treated with white enamel paint.

Mr. Herbert Lucas, of New York, was the architect.



Second floor plan



First floor plan



CORRESPONDENCE



The Editor of *American Homes and Gardens* desires to extend an invitation to all its readers to send to the Correspondence Department inquiries on any matter pertaining to the decorating and furnishing of the home and to the developing of the home grounds.

All letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this Department.

Problems in Home Furnishing

By Alice M. Kellogg

Author of "Home Furnishing: Practical and Artistic"

CURTAINS FOR A BLUE-AND-WHITE NURSERY

A CONNECTICUT reader, Mrs. D. G. F., writes as follows: "I have kept to a very simple color scheme in my children's rooms, using a tan-colored paper (ingrain) on the walls, a blue-and-white Brussels rug on the floor, with white woodwork. Now when it comes to the windows I am undecided as to whether to keep to white Swiss muslin or a plain blue material somewhat thicker. There is a large bay window with a wide window in the centre and a smaller window at each side. Shall I put up three pairs of curtains? Then there is a row of small windows at the side with small panes of glass, the sashes opening outwards. What is the prettiest way to treat these irregular-shaped windows?"

A better plan for this nursery than either a plain blue curtain, or a white muslin, is a blue-and-white muslin made in a tiny woven pattern especially for casements. For the bay window, a pair of curtain may be hung at the centre, looping each length back at the side. At the narrow windows one length of the muslin may be hung almost plain over the glass in panel fashion, trimming the two sides and bottom with an edge of lace, which should also be applied to the centre pair of curtains. As the casement windows are long and low a different scheme will be necessary for them. A frill of the muslin, twelve or sixteen inches deep as the height of the window requires, may hang at the top, with a length to the sill at the extreme ends. The frill need only be carried from the side length at the right to the side length of muslin at the left of the window. If the window has a sill wide enough to hold three pots of flowers the room will have an element of out-door interest framed in its sash.

FURNISHING AN UP-STAIRS HALL

Moving from a city apartment into a suburban house, Mrs. I. W. N. finds a second-story, square hall to be furnished. She asks: "What shall I put in this space? It is not used in any way, yet it looks very bare with nothing in it. All of the main bedrooms open from this hall, so that I should like it to have some individuality. The walls are papered in a two-toned tan paper, and the woodwork is a dark oak. We have no rug for the floor. Would you advise a carpet instead of a rug?"

A second-story hall of this kind is cer-

tainly prominent enough to demand a careful furnishing. Without attempting to make it a cosy corner, it should have interesting furnishings. A rug that will lie firmly on the floor, of a size that comes within a foot of the walls, would be more practical than a carpet. If the rugs of ordinary make do not meet this requirement of size, a carpet rug may be made of a good quality of Brussels, Axminster or Wilton, according to the expense to be allowed for this item. Wilton, of course, will wear the best.

As the wall paper is not particularly decorative, there is opportunity for hanging some pictures, and the Guerin prints are suggested for their distinctive coloring and interesting subjects. These prints may be framed in dark oak like the woodwork, with a soft-toned mat and a narrow rim of gilt dividing the mat from the frame.

If there is a connection with electric or gas lighting, a low lamp placed on a drop-leaf table will be another means for ensuring an attractive interior. The *verde antique* finish will give a better contrast with the tan walls and brown woodwork than a brass lamp. A wicker shade lined with orange-colored paper would be a pleasant note of color.

If there is a suitable space for an open book-shelf, a collection of books may be kept in the hall, for use on this floor. A pair of bedroom candlesticks and a reliable timepiece may then find a place on the top shelf of the case. A comfortable side chair may have a place, but the elimination of unused furniture should be very strictly followed if the character of a hall is to be preserved.

COLOR SCHEME FOR A CANADIAN HOME

"I have read the replies to correspondents who are interested in making attractive homes, and wonder if you can give me also some inspiration? What I especially would like would be suggestions for the wall colors for the different rooms on the first floor, so that in opening one into another the effect will be pleasing. I visit so many places where the careless contrast of wall papers really disfigures the house. Now, my reception room is a south-east exposure, and it opens into the hall and living room. The living room has windows to the east and south. The fireplace is of red brick, the ceiling is beamed, and there are built-in bookcases and seats. The dining room opens to the northeast. The ceiling is coved for a space of eighteen inches, and there is a plate rail. What is the best way to treat this upper section of wall? The hall is panelled to the top of the door frame, with only the upper wall

to consider. There is also a small den with one west window, which needs the fullest amount of light. Please help me with a complete color scheme for these rooms, and oblige a Canadian reader, A. L."

Only a general idea for the wall colors may be suggested at this distance, as the furniture that is in use is not indicated in the letter of inquiry. The rug or carpet is always the best starting point for a color scheme, and the finish of the woodwork is another important factor. Independent of these features, a pleasant color effect might be obtained by adopting a Japanese leather paper in burlap printing, gold and green, or gold and red (as the rugs demand) in the upper spaces of the hallway. In the reception room a soft, light shade of green with the pattern printed in self-tones may be used. In the living room a quiet background can be achieved with a gray silk fibre paper. The dining room opening to the north may have a two-toned yellow paper, with the cove and ceiling tinted in a lighter tone of the yellow. In the den that lacks light until late afternoon, an apricot color may be chosen. Madras curtains showing the same color as the walls, in a mixture of cream-white, would help out the bright coloring.

FITTINGS FOR A WRITING TABLE

"We have just installed a small writing table, mahogany inlaid with satinwood, in our reception hall, as we often find a need for writing materials on the first floor. What is the best way to fit up a table of this kind in this location? Shall we use an ordinary blotter? Or would a metal-trimmed blotter be more suitable? I have only seen the openwork brass holders, and these I do not fancy."—T. E. H., of Virginia.

A table of this kind can become a very attractive part of the furnishings of a reception hall (which is too often the most uninteresting room in the house), if its fittings are thoughtfully selected. A holder for a blotter may be of hand-tooled leather, antique brocade or dull copper, and the blotter itself may be of a warm brown. The ink-well may be of plain crystal, with a smooth silver top, and the pen-rack may be of plain silver. An ivory pen-holder tipped with silver would be less conventional than a silver holder.

If there is space for a candle lamp made of a Colonial candlestick fitted for electricity (with a silk shade of champagne-colored silk), slender Grueby vase to hold a few flowers, and a bookrack for a few small books, the upper part of the writing table will be quite decorative.



GARDEN NOTES

CONDUCTED BY CHARLES DOWNING LAY



ON another page of this issue is the announcement of next year's garden competition, which promises to be even more interesting than the last, because of the more restricted conditions and the greater chance it offers to the true garden lover.

These prizes give one a rare chance to make a profitable pursuit of a delightful luxury.

Who would not like to have the satisfaction of a cash prize added to the other pleasures of a flower garden? Even the smallest prize would pay for many new plants, or seeds, or bulbs for the following year. Is it not as great an honor to the architect of gardens to get a first prize or even an honorable mention for the product of his genius as it is to the artist who gets a "mention" at the Salon?

There is no reason why a garden designed this winter and planted this summer should not take a prize. There is no reason why a garden already built should not be so worked over and improved this spring and summer that it will take first prize.

If you are going to enter your garden for the competition, now is the time to think of its arrangement for next year. You should make a plan of the garden, showing the planting, and you should study the planting scheme with great care, going over it in detail, trying new groupings to make it more harmonious in color, new plants to make it more constant in blooming, never forgetting, of course, the physical needs of each plant. You will not have peonies in front of pansies, to take an exaggerated case, nor will you care to mix the reds of gladioli and phlox. These are samples of poor arrangements. You will find others that are less obvious though no less distressing to a cultivated taste.

Flowers that are uninteresting or ineffective will, of course, be weeded out, to be replaced by the untried novelties of this season's catalogs.

The design of the garden in general may lack simplicity and unity. It may fail of its effect because it is too disordered and diffuse. This fault you may be able to correct by some rearrangement of paths or of beds, or you may decide that a radical change is necessary. Sometimes enlarging the garden will help, and again, it may be well to divide it into several parts differing slightly in character.

If it is flat and uninteresting, and lacks "scale" (that is, is out of proportion either to its surroundings or its own details or to the human figure)—if it lacks scale, it may be helped by spiry cedar trees or poplars or by some architectural details, such as an ornamental gateway or pergola or a sundial.

Water in a garden, either in a pool for pond lilies or a fountain, is always a great help, and is often easier to introduce than people suppose.

In a wild or naturalesque garden, the free use of the axe and the bushhook in cutting out its deformities and monstrosities may be sufficient.

If the garden is not now built, it will be harder to win a prize, though by no means impossible. There are three months between now and April, when operations should be begun. You should try many schemes for many sites, and when you have at last decided on one of them, you should have a clear conception of what the garden will look like when finished.

Be careful about the location of the garden, and make the most of all its natural beauties and character.

If there is a fine old tree, make that the focus; if there is a boulder or a ledge or a stream, make it part of the garden.

Above all, enclose the garden, whatever its nature, so that nothing except the blue distance can be seen beyond its boundaries.

NEW CLIMBING ROSES

Two new climbing roses, hybridized and raised by Jackson Dawson, are to be introduced this spring, and promise to become more popular than the crimson rambler. They are certainly more beautiful in flower and foliage, and are equally hardy.

Lady Duncan is a seedling of the memorial rose (*Rosa Wichuriana*), fertilized with pollen from *R. rugosa*. The flowers are single, petals a deep pink and a little larger than those of the memorial rose. The stamens are yellow. The *rugosa* blood shows in the dark, roughened foliage and the plentiful spines. This rose won the silver medal of the Massachusetts Horticultural Society in 1900.

It can be trained on pillars or arches in the garden, or on the piazza. Like the memorial rose, it is prostrate when not supported. The long shoots run ten or twelve feet over the ground in one summer.

Daybreak is a cross between *Wichuriana* and the Dawson, which is itself a cross of *R. multiflora* and General Jacqueminot. It is a vigorous grower, and blooms profusely. The flowers are single, deep yellowish pink, in loose clusters. The stamens are bright orange, and the leaves are a light green.

A SHAKESPEARE GARDEN

Though not a new idea, the Shakespeare Garden, or garden of plants mentioned by Shakespeare, is a delightful one, and of all gardens it is the fullest of sentiment.

It should be a picturesque garden, or perhaps a whole place, with the English oak, the Scotch pine, the plane, the sycamore, the linden, the apple, the hawthorne, the birch, the ash, the beech, the elm and the willow planted on the edges or in the lawn. The ebony, cypress palm, date, senna, etc., cannot, of course, be grown in

this climate. The "locust" is not a tree, but a fruit, and the hemlock is not a tree, but a common, umbelliferous herb.

The yew is mentioned, of course, and is identified as the hebenon which killed Hamlet's father.

Many of Shakespeare's plants are weeds, like the rush, sedge, burdock, etc., and others are kitchen garden plants, like potato, cabbage, onions, garlic, lettuce and radish.

Of the real flowers or sweet herbs mentioned, the following can all be grown here with little trouble:

Aconitum, anemone, bachelor's buttons, balm, burnet, camomile, carnations, caraway, columbine, cowslip (primrose), crow flowers, crown imperial, cuckoo buds, daffodils, daisies, Dian's bud, eglantine, fennel, flax, flower-de-luce, fumitory, gorse, harebell, heath, hemp, honeysuckle, hyssop, ivy, lady'smocks, larkspur, lavender, lily, long purples, mallows, mandrakes, marigold, marjoram, mint, narcissus, oxlips, pansies, pinks, piony (paeony), poppy, primrose, roses, rosemary, saffron, samphire, savory, thyme, vetches, violets, wormwood. The list is not a long one, but they are all interesting plants, and what opportunities they give to quote! They will not all be found under these names in seed catalogs, but can be looked up with their fitting quotation in Canon Ellacomb's delightful book on the "Plant Lore and Garden Craft of Shakespeare."

BOOKS ON GARDENING

THE collection of books on gardens and gardening is almost as fascinating a pursuit as gardening itself, and easier to follow in the winter, particularly if one moves to the city with the first snow, to stay until the crocuses and daffodils are in bloom.

The gardener's library will, of course, include such excellent works of reference as the "Cyclopedia of American Horticulture," in which one can find a description of any plant that is grown in America, outdoors or under glass. Besides its botanical and cultural information, there is much interesting history and biographical gossip.

Button and Brown's "Flora," with its drawing and description of every plant found wild in the Northern United States, is indispensable, and should be followed in nomenclature.

Sargent's "Manual of Trees," which is an abridgement of his monumental sylvia, is useful and entertaining.

In Prof. Bailey's "Rural Science" series, "The Soil" and "Irrigation and Drainage," both by Prof. King, are admirable.

The "Garden Craft" series has many useful books which the gardener will do well to own. "The Horticulturalist's Rule Book," "Garden Making" and "The Pruning" books are to be especially noted.

Continued from page v.

of how things grow and live in the garden; a lot about plants and the weather; a lot about out-door life all the year 'round. All told, if you please, in the most delightful way, so that the mere scanning of the words, is a delight. If not actually a new kind of a garden book, it puts garden life in a new way, and is thoroughly interesting from cover to cover.

Surely there is merit in this procedure; for one of the principal purposes of art is to be engrossing; one of the chief ends of literature is to be interesting; the real object of writing a book is to produce something that people will read. Garden books are rarely literature, rarely books one will read through from beginning to end for the sheer love of reading. Their authors, for the most part, are too intent on telling you what to do and how to do it. There is, it is true, a host to learn in garden lore, even for the best of us; but at times it is a bit tiresome to read of soils and growths and prunings and seeds and flower pots. The real growth out of doors is the thing and our garden-book authors seldom get even a whiff of the real atmosphere.

Not so Mr. Farrer. He loves his plants and knows them; understands them too, and how they need to be reared and sheltered. And he tells you all about these things while you think he is simply describing scenery! Garden lore was never more agreeably served up than in his pages. He has achieved a real success in book making and has produced a book at once instructive and entertaining.

AUTOMOBILES AND ROADS IN FRANCE

THE action of automobile traffic upon road surfaces is quite different from that of horse-power vehicles, points out Ernest Flagg in an article discussing French and English roads in the Century Magazine. The tires exert a sucking action, which draws out the particles of the binder from between the stones, and loosens them. No road of broken stone can stand an excessive amount of such usage; but where motor traffic is light, and the road is in perfect condition, little damage is done except at turns. The particles sucked from between the stones are quickly restored by sweeping, and consolidated by the ordinary traffic.

The damaging effect of excessive motor traffic can be seen in the roads immediately about Paris. Within a zone of twenty miles around the city they are in a state of ruin. The surface is so cut up that it is almost impossible to drive over them, and they are now to be replaced by roads of a different kind, designed to meet this sort of traffic.

The effect of motor traffic is most disastrous on roads where depressions are allowed to form on the surface. In wet weather, the water which collects in them is violently thrown or splashed out by the wheels, carrying with it the binding material from between the stones. In such places a few passings machines will be sufficient to dig out a pot-hole, and unless this is speedily filled in, a rut will be formed.

At corners and turns in the road the wheels of swiftly moving motor-cars slip and grind the surface, tearing the stones apart, and breaking up the crust.

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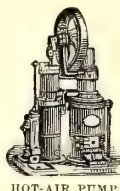
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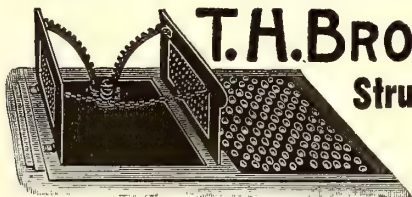
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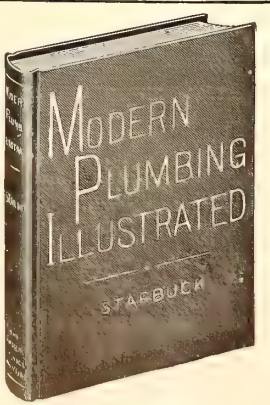
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Continued from page vii.

iron oxide and feldspar are the most common. The latter two may be left out of consideration, as they seldom appear save in small quantities. Clay, however, is nearly always found in sand and many times in considerable quantities. To determine what effect the presence of clay has upon the strength of sand-lime brick, S. V. Peppel, a member of the Ohio Geological Survey, made some valuable experiments. He made up numerous samples of brick, varying in each the percentage of clay. Upon testing these brick he found that up to three per cent addition of clay very little change took place in the strength of the brick, but for amounts over this there was a decided decrease both in crushing and tensile strength. It was also interesting to note that small amounts of clay decreased slightly the water absorption of the brick, acting to some extent as a waterproofing agent.

For the manufacture of sand-lime brick a high calcium lime is by all means the best. Magnesian limes while they give just as strong a brick as do the high-calcium limes yet they are too slow in slacking and one runs considerable risk in using them, since if the lime is not thoroughly slacked before the brick go into the hardening cylinder slacking will continue, and the lime expanding will crack and ruin the brick. The best practice demands eight per cent by weight of slacked lime. A less amount of lime than this does not give a brick first class strength; and a larger per cent of lime than this, while it adds slightly to the crushing strength of the brick, it also adds to the water absorption, and incidentally to the cost.

To secure the best results the lime must be thoroughly mixed and ground up with the sand. For this mixing and grinding there are various machines upon the market which can be used. Among them are the tubemill, ballmill, and gyratory mill. The last two mills mentioned have one advantage over the former, that is of being able to handle the material when it is slightly damp, whereas in the tubemill a trace of moisture in the material causes the lime to stick and form a coat over the sides of the silix lining, in which case little or no grinding is done by the mill. However, the material being dry, of these three classes of mills I believe the tubemill to be the best, as it not only gives a very finely ground product but also gives a more thorough mix than the other two mills. Another point in its favor is that the cost of repairs on a tubemill is considerably less than that required by the ball or gyratory mill.

In the manufacture of sand-lime brick the machinery is subject to much greater wear and strain than that used in the production of clay brick, and the maximum of this wear centres in the grinding mill and the press. The press must be massive and built to withstand excessive strains, because a slight variation in the amount of water added to the mix makes a very great difference in its compressibility; therefore the press must have a large surplus of strength in order to withstand this extra stress which will most likely be brought upon it. Within the press the greatest wear is on the mold box and mold liners. A set of the best liners will turn out about 100,000 perfect brick. Beyond this number they become considerably worn and the edges of the brick are feathered and rough so that they are suitable only for common brick.

In steaming the brick two methods can be followed to secure the same result;

either a high steam-pressure for a few hours or a low steam-pressure for a comparatively longer period. In either case the brick will attain the same degree of hardness. Most manufacturers are, however, agreed that 8 hours at a pressure of 120 pounds per square inch (2 hours being required to bring the cylinder up to this pressure) is the best and most economical practice. The steam must not be turned in too fast, as the surfaces of the brick will become highly heated while the interiors remain cold; the unequal expansion thus produced causes the brick to check.

Through the overzealous efforts of machinery jobbers who think only of disposing of their machinery, an erroneous impression has been spread abroad that sand-lime brick can be manufactured at an extremely low cost. The cost of manufacturing sand-lime brick depends upon the same variable quantities as does the manufacture of clay brick or any other product. Labor and fuel are the main items in the manufacture of brick and to produce brick cheaply a dollar's worth of labor must be got for every dollar paid for labor, and for every pound of fuel the greatest possible number of heat units must be utilized. It is the stopping of the little leaks that make the profits in manufacturing.

PRUNING

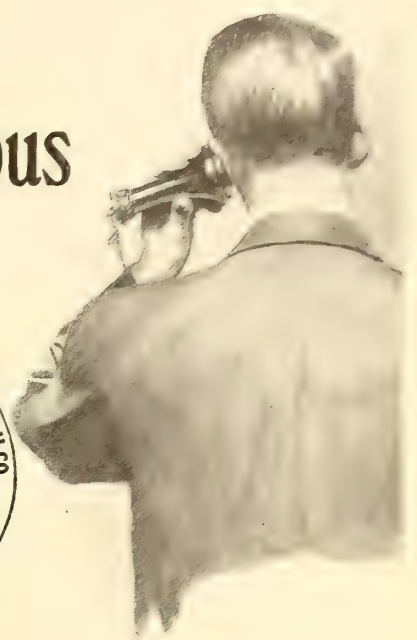
PRUNING is one of the essential operations in horticulture. Its objects are many and varied. It has been practiced in some form and to some degree ever since fruit plants have been grown, points out Prof. W. R. Lazenby in a paper read before the Society for Horticultural Science, at St. Catharines, Ont.

In spite of its signal importance it is the one fundamental practice in horticulture about which we have little definite or exact knowledge and still less well-grounded principles. Is it too much to say that less real progress has been made in the art of pruning during the past quarter of a century than in any other equally important branch of horticultural practice?

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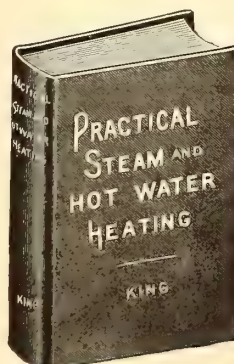
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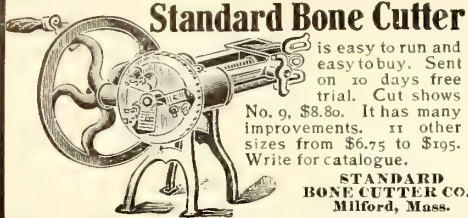
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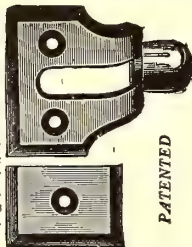
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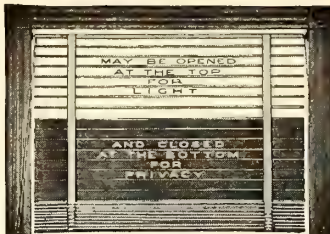
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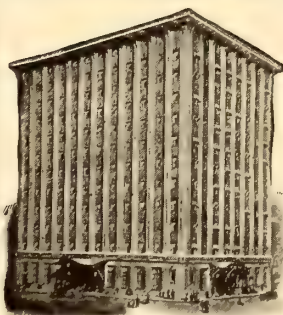
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tion from insect enemies and fungous disease, harvesting, storing and marketing, substantial progress has been made, and well-defined systems or policies have been quite generally adopted. On the other hand, there are few definite or well-defined systems of pruning. It is a sort of hit-or-miss, go-as-you-please policy from start to finish.

Aside from our fruit plants the rejuvenation and prolongation of life of our native trees that have for generations beautified, even glorified, the landscape, and have such a potent influence upon the esthetic life, may well be considered. The life of a veteran tree outside of the forest at least should be cherished with zealous care. What a contrast to the works of man! As we watch its growth there is no push and pull, no stress and strain, no grimy toil, no agony, no bloody sweat. It represents the calm, silent, persistent, resilient forces of nature, acting through scores, or even centuries, of years. Yet it can be destroyed in an hour, and when it is gone there is a vacancy not soon or easily filled.

The time has come when more attention should be given to the dwarfing of trees by systematic pruning. As land becomes more and more valuable, and orchard areas more circumscribed, there will be a natural tendency to plant more closely. This will necessitate and impel to more radical pruning. We should be prepared for this.

Ten years ago the writer established a home on a vacant city lot. This lot was 75 by 160 feet and devoid of tree or shrub. The question was how to have a comparatively spacious open lawn and a goodly number of trees, not excluding a fair proportion of shrubs, herbaceous perennials and annuals. With some misgivings and with the expectation of a speedy removal of at least two-thirds of the number, about two-score of trees were planted, some at considerable distance apart to form a border, others in close or compact groups, and quite a number at various points in close proximity to the house. Since that first planting, many other trees have been added, and yet, by a more or less systematic pruning, all have been kept well within the allotted space. It was a revelation to me to learn that with slight but watchful care trees like the elm, sycamore, box elder, pin oak, basswood, silver maple, buckeye, hackberry, etc., could be so easily dwarfed and at the same time retain their individuality in so marked a degree.

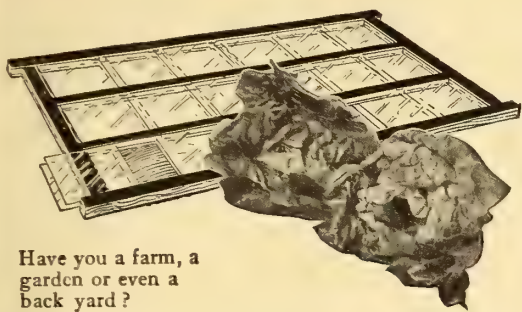
The result of the close group or compact planting was even more striking in mass and foliage effect. I have rarely if ever seen a more effective small group of shrubs or trees, or the two combined, than one kept now for many years at a height of from ten to twelve feet, and composed of the closely intermingled branches and foliage of the ailanthus, mulberry, honey-lo-cust, sassafras, coffee tree, sweet gum, white birch and willow. Of course the success of such planting depends mainly on pruning, and how little we know of the kind of pruning that will give the best all around results. It is certainly an interesting field for the landscape horticulturist.



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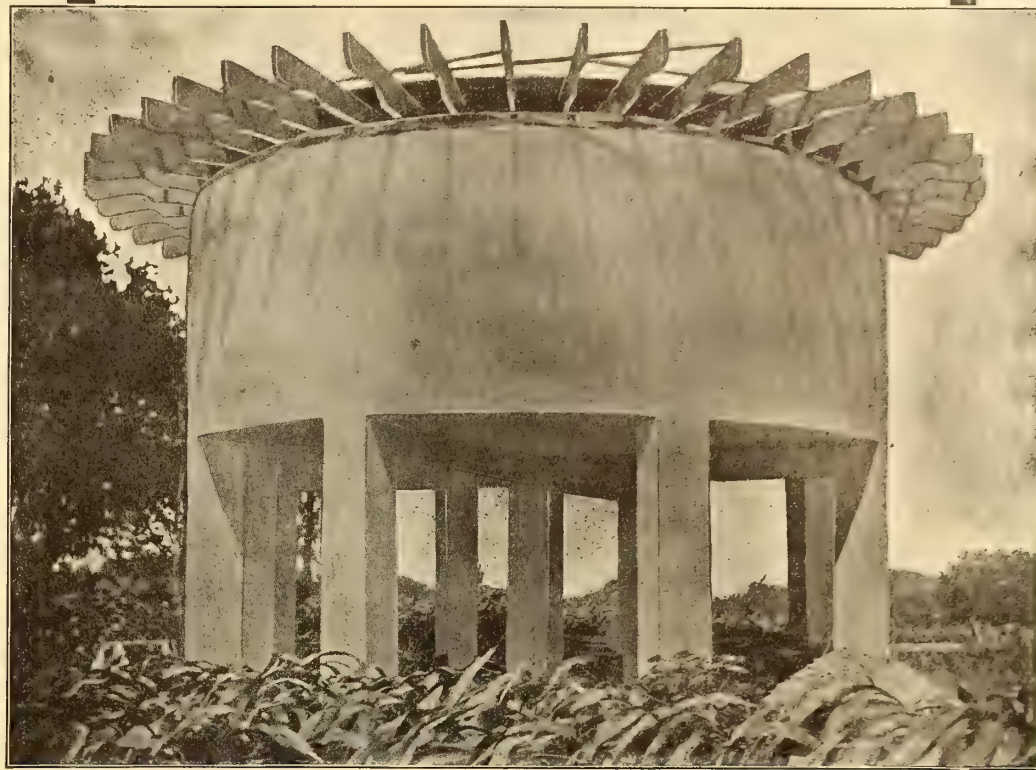
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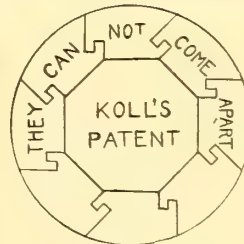
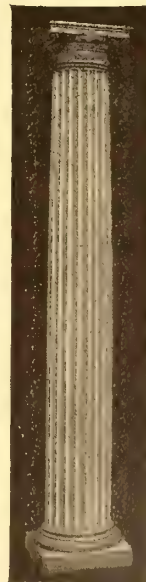


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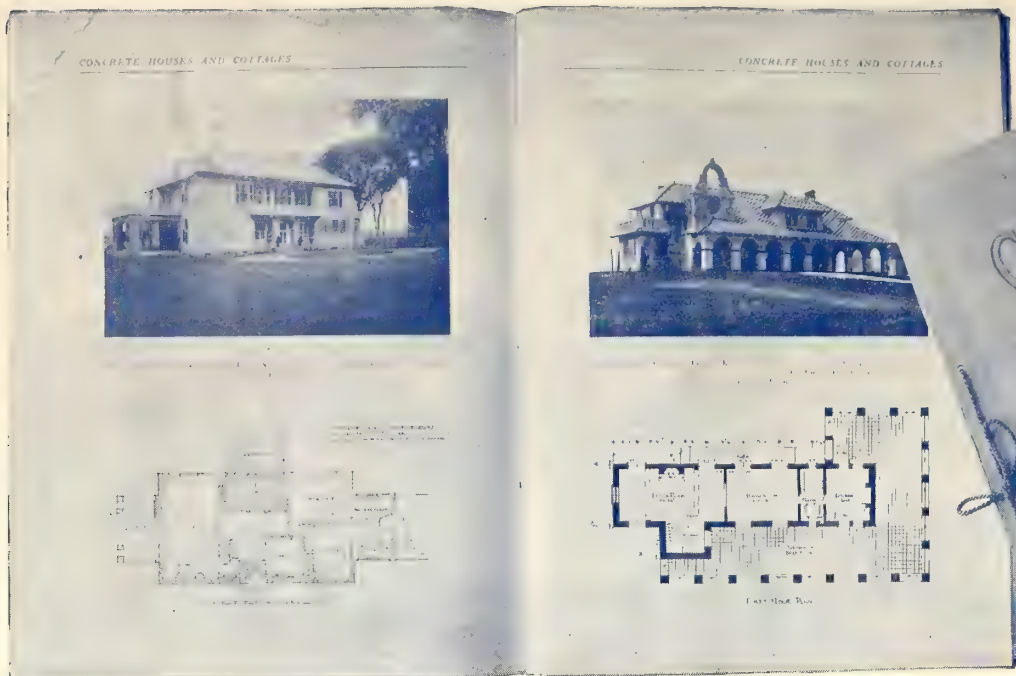
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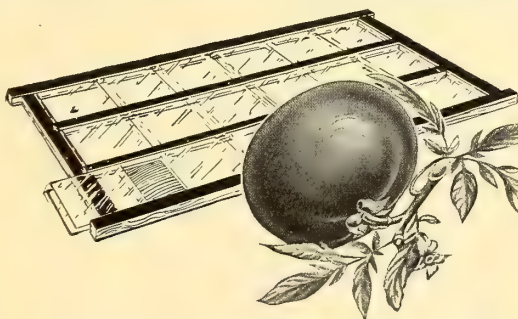
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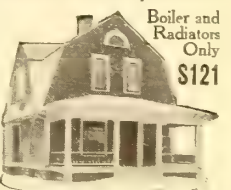
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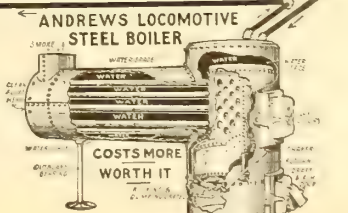
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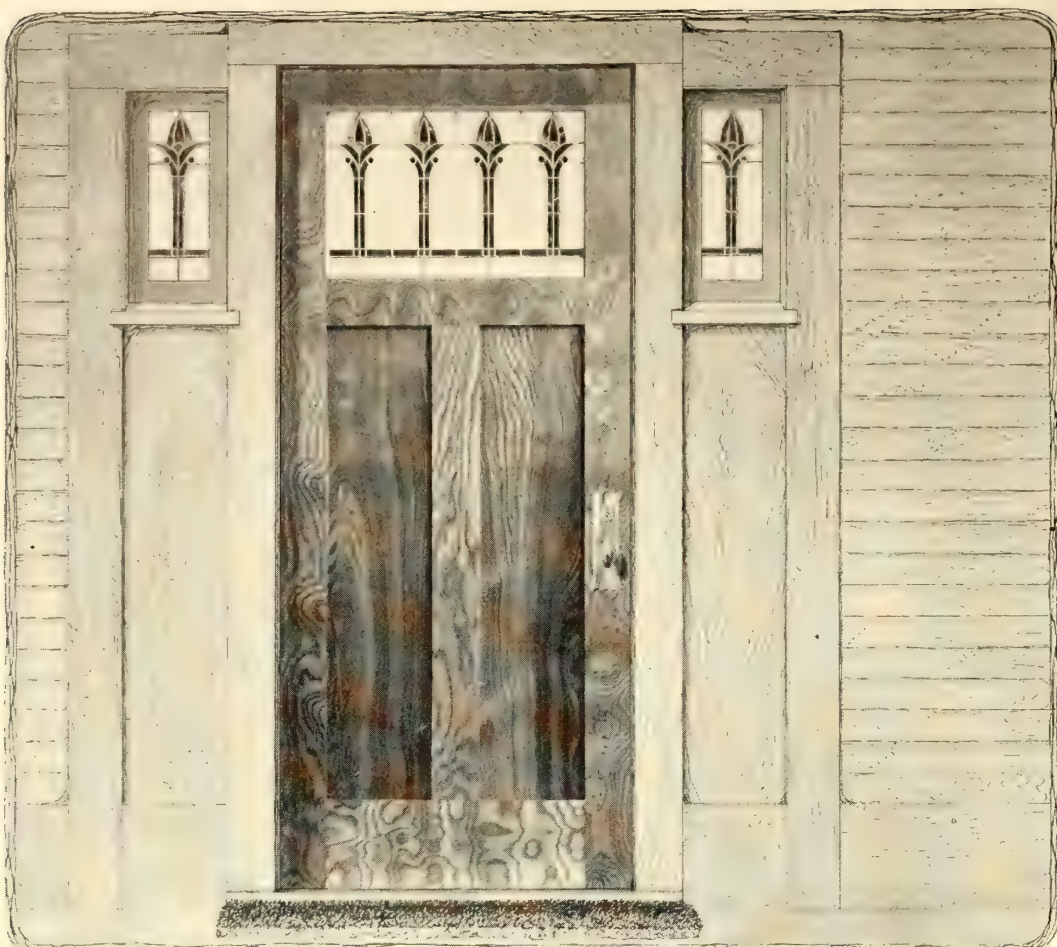


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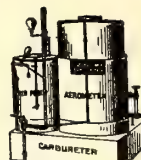
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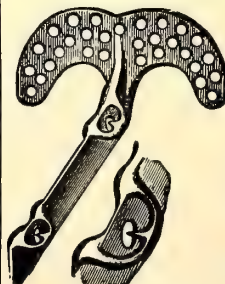
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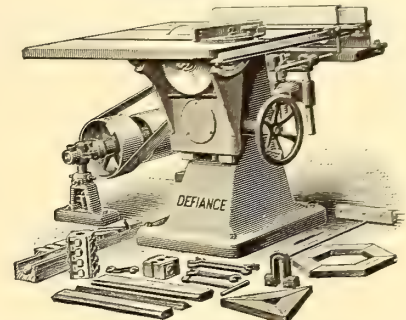


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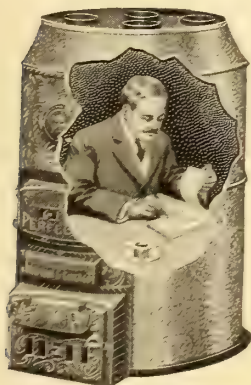
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12mo, 5¼ x 7½ inches, 196 pages, 140 illustrations. Price, \$1 50 Postpaid

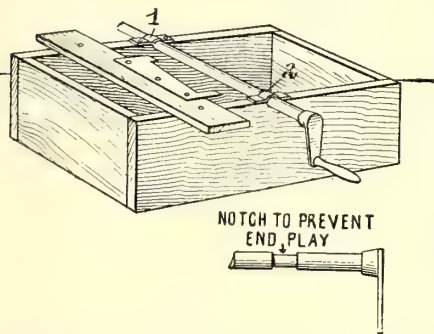
A most attractive book. The only work issued on the subject

THIS work should appeal strongly to all those interested in ornamental concrete, as the author has taken up and explained in detail in a most practical manner the various methods of casting concrete in ornamental shapes. The titles of the thirteen chapters which this book contains will give a general idea of the broad character of the work. They are entitled:

I., Making Wire Forms and Frames; II., Covering the Wire Frames and Modeling the Cement Mortar into Form; III., Plaster Molds for Simple Forms; IV., Plaster Molds for Objects Having Curved Outlines; V., Combination of Casting and Modeling—An Egyptian Vase; VI., Glue Molds; VII., Colored Cements and Methods Used for Producing Designs with Same; VIII., Selection of Aggregates; IX., Wooden Molds—Ornamental Flower Pots Modeled by Hand and Inlaid with Colored Tile; X., Concrete Pedestals; XI., Concrete Benches; XII., Concrete Fences; XIII., Miscellaneous, including Tools, Waterproofing and Reinforcing.

The first two chapters explain a most unique and original method of working pottery which has been developed by the author. The chapter on color work alone is worth many times the cost of the book, inasmuch as there is little known on this subject, and there is a large and growing demand for this class of work. The author has taken for granted that the reader knows nothing whatever about the material and has explained each progressive step in the various operations

throughout in detail. These directions have been supplemented with half-tones and line illustrations which are so clear that no one can misunderstand them. The amateur craftsman who has been working in clay will especially appreciate the adaptability of concrete for pottery work, inasmuch as it is a cold process throughout, thus doing away with the necessity of kiln firing, which is necessary with the former material. The book is well gotten up, and is printed on heavy glazed paper and abounds in handsome illustrations throughout, which clearly show the unlimited possibilities of ornamentation in concrete.



Handy Man's Workshop and Laboratory

Compiled and Edited by A. RUSSELL BOND

12mo, 6 x 8¼ inches, 467 pages, 370 illustrations
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A Collection of Ideas and Suggestions for the Practical Man

EVERY practical mechanic, whether amateur or professional, has been confronted many times with unexpected situations calling for the exercise of considerable ingenuity. The resourceful man who has met an issue of this sort successfully seldom, if ever, is adverse to making public his methods of procedure. After all, he has little to gain by keeping the matter to himself and, appreciating the advice of other practical men in the same line of work, he is only too glad to contribute his own suggestions to the general fund of information.

About a year ago it was decided to open a department in the *Scientific American* devoted to the interests of the handy man. There was an almost immediate response. Hundreds of valuable suggestions poured in from every part of this country and from abroad as well. Not only amateur mechanics, but professional men, as well, were eager to recount their experiences in emergencies and offer useful bits of information, ingenious ideas, wrinkles or "kinks" as they are called. Aside from these, many valuable contributions came from men in other walks of life—resourceful men, who showed their aptness at doing things about the house, in the garden, on the farm. The electrician and the man in the physics and chemical laboratory furnished another tributary to the flood of ideas. Automobiles, motor cycles, motor boats and the like frequently call for a display of ingenuity among a class of men who otherwise would never touch a tool. These also contributed a large share of suggestions that poured in upon us. It was apparent from the outset that the Handy Man's Workshop Department in the *Scientific American* would be utterly inadequate for so large a volume of material; but rather than reject any really useful ideas for lack of space, we have collected the worthier suggestions, which we present in the present volume. They have all been classified and arranged in nine chapters, under the following headings:

I., Fitting up a Workshop; II., Shop Kinks; III., The Soldering of Metals and the Preparation of Solders and Soldering Agents; IV., The Handy Man in the Factory; V., The Handy Man's Experimental Laboratory; VI., The Handy Man's Electrical Laboratory; VII., The Handy Man about the House; VIII., The Handy Sportsman; IX., Model Toy Flying Machines.

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By A. RUSSELL BOND

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THIS book is a sequel to "The Scientific American Boy," many thousand copies of which have been sold, and has proven very popular with the boys. The main object of the book is to instruct how to build various devices and apparatus, particularly for outdoor use. The construction of the apparatus which is fully within the scope of the average boy, is fully described and the instructions are interwoven in a story, a feature which has assisted in making "The Scientific American Boy" so popular and interesting to the boy.

It takes up the story of "Bill" and several of his companions at boarding school. They form a mysterious Egyptian society, whose object is to emulate the resourcefulness of the ancients. Their Chief Astrologer and Priest of the Sacred Scarabeus is gifted with unusual powers, but his magic is explained so that others can copy it. Under the directions of the Chief Engineer, dams, bridges and canal-locks are constructed. The Chief Admiral and Naval Constructor builds many types of boats, some of which are entirely new. The Chief Craftsman and the Chief Artist also have their parts in the work done by the Society, over which Pharaoh and his Grand Vizier have charge. Following is a list of the chapters:

Chapter I., Initiation; Chapter II., Building a Dam; Chapter III., The Skiff; Chapter IV., The Lake House; Chapter V., A Midnight Surprise; Chapter VI., The Modern Order of Ancient Engineers; Chapter VII., A "Pedal Paddle-Boat"; Chapter VIII., Surveying; Chapter IX., Sounding the Lake; Chapter X., Signaling Systems; Chapter XI., The Howe Truss Bridge; Chapter XII., The Seismograph; Chapter XIII., The Canal Lock; Chapter XIV., Hunting with a Camera; Chapter XV., The Gliding Machine; Chapter XVI., Camping Ideas; Chapter XVII., The Haunted House; Chapter XVIII., Sun-Dials and Clepsydras; Chapter XIX., The Fish-tail Boat; Chapter XX., Kite Photography; Chapter XXI., Water-Kites and Current Sailing; Chapter XXII., The Wooden Canoe; Chapter XXIII., The Bicycle Sled; Chapter XXIV., Magic; Chapter XXV., The Sailboat; Chapter XXVI., Water Sports, and Chapter XXVII., Geyser Fountain.

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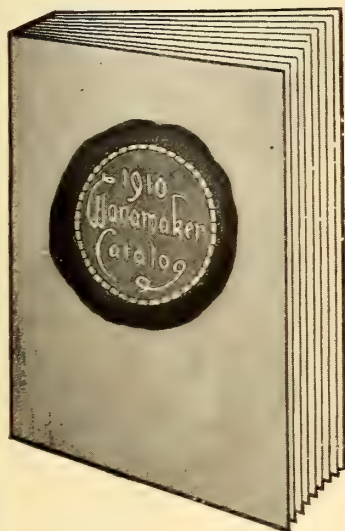
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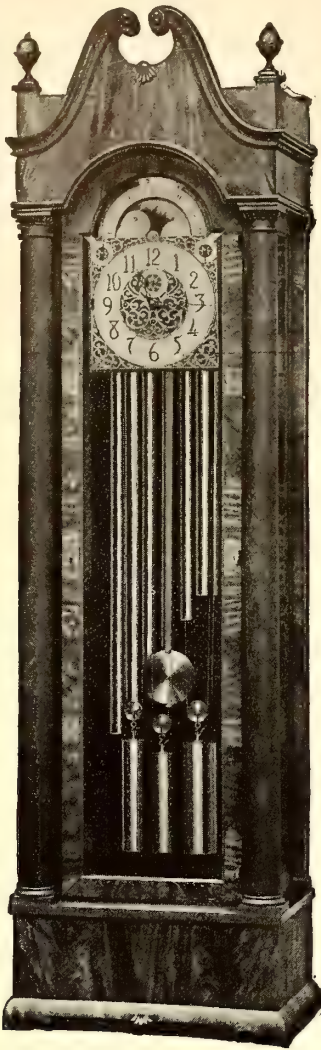
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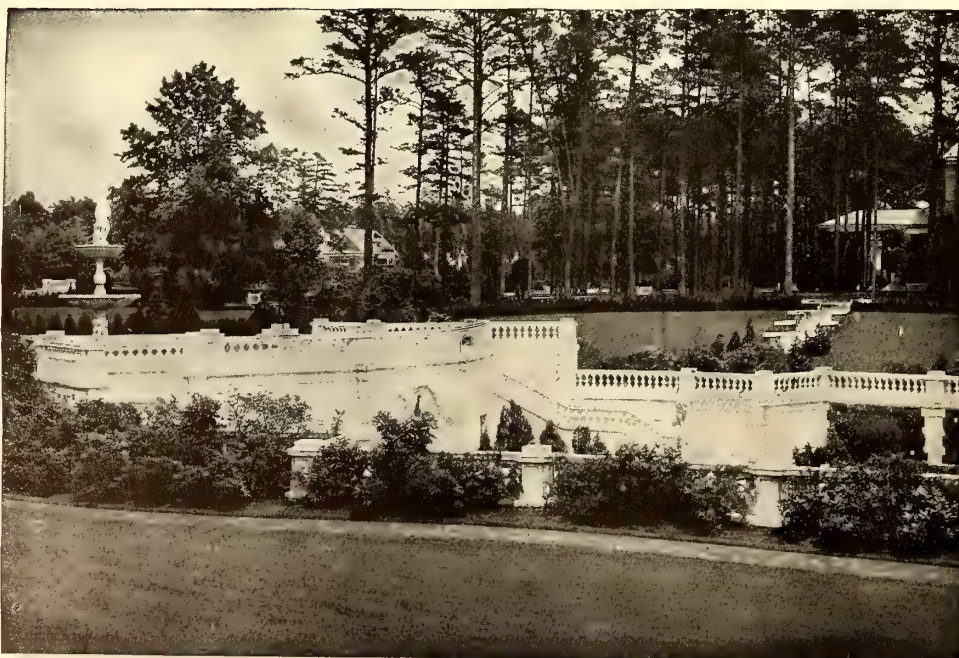
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Garden Competition for 1910



The Garden in Your Town



THE publishers of American Homes and Gardens desire to announce a Garden Competition for 1910, and will offer \$100 for the four best planned, developed and successful suburban or village garden. The Garden Competition Editor of American Homes and Gardens wants to know if your garden is a success. If so, write and tell him about it. Tell him how you planned and how you planted your garden, and what success you had with it; tell him of the plants with which you had the best results and the ones which were failures; how you arranged for a succession of bloom; how you made use of the natural limitations of the plot and what mistakes you made. We want you to help us so that we may help others to beautify their surroundings, for this is the object of this competition. You need not be a skilled writer to tell the story of your garden success. Tell it in your own way.

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For the best garden received we will pay :

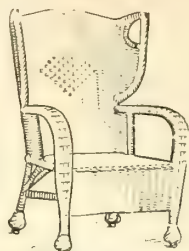
For the first	-	\$50.00	For the third	-	\$15.00
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Conditions

Competitors for the prizes must comply with the following conditions :

- 1 A general description of the garden, consisting of not more than fifteen hundred words, giving the size of the plot and the kind of plants used in planting, must be submitted. Give any details which you think will be of interest.
- 2 Drawings of the plot are to be made in black and white, drawn to the scale of eight feet to an inch, showing the position of the various plants and shrubs. Name each variety of plant on the plan by a number, giving a separate list with a corresponding number by which each plant may be identified.
- 3 Photographs of the garden must be submitted. It will be of interest to send as many photographs of the garden, taken from as many points of view and at different times in the summer, as illustrate the changes in the garden's appearance to the dominance of certain flowers. The photographs must be printed on printing-out paper and are to be not less than five by seven inches in size. A photograph of the site of the garden before it was developed would add interest to the series.
- 4 Descriptions, drawings and photographs are to be marked with a pseudonym which is to be enclosed in a sealed envelope containing the name and address of the competitor. All descriptions, plans and photographs are to be sent free of any name or address on them except the pseudonym. Express or postage charges must be fully prepaid.
- 5 Just as soon as the judges have rendered a decision upon the four best gardens submitted for this competition, they will notify the Editor who will open the envelopes bearing the pseudonym and containing the competitor's true name, and will at once notify the successful competitors that they have won the prizes.
- 6 The Garden Competition Editor reserves the right to publish in American Homes and Gardens all prize gardens and those gardens which in the opinion of the judges are worthy of honorable mention. The names of those whose gardens are reproduced will be published with the photographs.
- 7 Contributions are to be submitted to the Garden Competition Editor, American Homes and Gardens, Munn & Co., Publishers, 361 Broadway, New York.
- 8 The garden competition closes September 15, 1910. Contestants need not to be subscribers to American Homes and Gardens, and no charge or consideration of any kind is required. No photographs, manuscript or plans will be returned.

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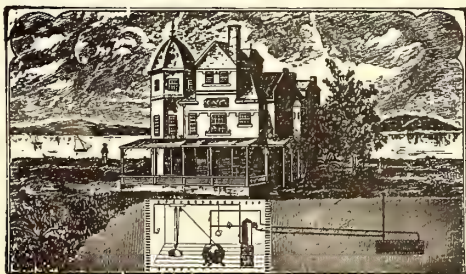
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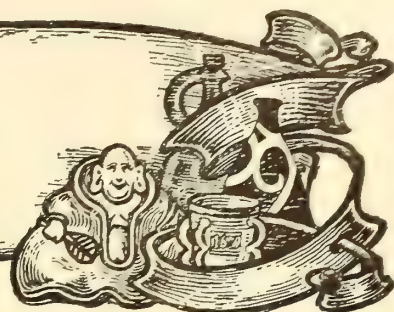
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American Homes and Gardens for March



A Notable Home

The unique and interesting house built for Arthur Steinbach, at Asbury Park, New Jersey, is the opening subject of the March issue. It is constructed of concrete, and is one of the most delightful on the Jersey shore. Barr Ferree has prepared an excellent article on this fine house, which is profusely illustrated with many handsome engravings.

Heating the Orchard

This is a very timely article for the early spring. The subject of heating the orchard and the means of providing stoves for such a purpose as occasion may require to protect fruit trees from an early frost, is adequately prepared by W. Frank McClure.

Trimming Trees

Another timely paper is the one on trimming street and lawn trees, contributed by E. P. Powell, who is too well known to need any further comment as to his ability in giving accurate information on this subject.

Furnishing the Flat

The third paper on Furnishing the Flat, by the well known writer Lillian Hamilton French, will be devoted to the dining room. No one is better able to tell one what to do and what not to do in the furnishing of the various rooms of a flat than Miss French, for the reason that she has given much thought to the subject, and has had wide experience in this kind of work. The first paper on Furnishing the Flat was devoted to the hall, and appeared in the January number of AMERICAN HOMES AND GARDENS. The second paper on the drawing room is published in the current issue.

Water Gardens

What could be more beautiful or delightful to the eye, at this season of the year, than a study of the handsome illustrations of the water gardens of California? Kate Greenleaf Locke, the author of this article, who has spent most of her life among the gardens of California, knows something of the beauty of these delightful enclosures, and has prepared a very interesting paper on the subject.

A Concrete House

A concrete house is well described by Robert Prescott. It is the home of an architect and is constructed of reinforced concrete, and shingles for the exterior of the building, and from plans prepared by the owner. The article is illustrated by exterior and interior views.

Forcing Bed and Storage Pit

Richard Maxwell Winans has furnished an article on the combined forcing bed and storage pit. He not only tells how a forcing bed can be constructed, but he also shows it by illustration. This is a very seasonable subject, and will be helpful to those interested in the forcing of vegetables under glass.

"Kenmore"

The historic mansions of the Rappahannock River, are always interesting to the lovers of the Washingtonian period. "Kenmore" is particularly interesting for the reason that it was built by Col. Fielding Lewis, who took his bride, Betty Washington, a sister of George Washington, to this house at the time of his marriage. Edith Dabney Tunis has written an excellent paper on this old house, which is profusely illustrated, and showing many of the old family portraits and antique furniture, which are still maintained in this splendid mansion.

The Prize Gardens

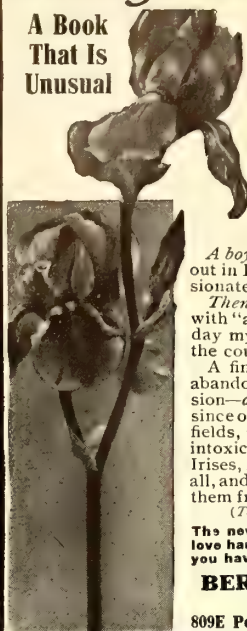
The gardens which were awarded the fourth and fifth prizes in the Garden Competition, recently conducted by AMERICAN HOMES AND GARDENS are one of the features of the number. The fourth garden prize was won by Mrs. Anna H. Condict, of Essex Fells, New Jersey, while the fifth was won by Edward H. Payson, of Lexington, Mass. These two gardens were planned and built by the owners, who have prepared interesting papers on the subject, which will be helpful to those contemplating the beautifying of their home grounds.

A Summer Home

Francis Durando Nichols in an illustrated article, tells of the beauties of an abode at Kennebuckport, Maine. It is an interesting house, well worth knowing something about, for it was built for a summer home, and the details will be of value to those who are going to build or who have one in the course of construction.

Farr's New Catalogue of Hardy Plant Specialties

A Book That Is Unusual



Describing a wonderful collection of IRISES, PEONIES, and PHLOXES—everywhere acknowledged to be the most complete in this country—a quarter of a million Irises and Peonies, in upward of a thousand varieties, besides Delphiniums, Phloxes, Poppies, and all the essentials of the Hardy Garden.

A RETROSPECT

A boy's garden on a prairie farm out in Iowa which developed a passionate love of "growing things." Then the great city and its cares, with "a nameless longing," till one day my doctor said: "Go back to the country and dig."

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(To be continued next month)

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Insure in the Hartford



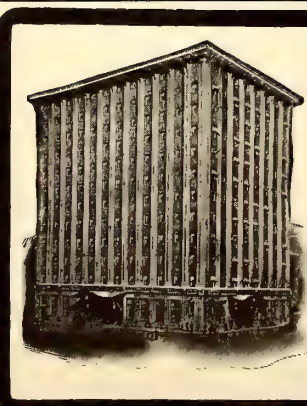
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CONTENTS FOR FEBRUARY, 1910

"HILL STEAD"—The Evergreen-Bordered Walk from the House into the Garden.....	42
MONTHLY COMMENT—Public Improvements in the Country	44
NOTABLE AMERICAN HOMES—"Hill Stead," the Estate of Alfred Atmore Pope, Esq., Farmington, Conn.	By Barr Ferree 45
THE REVIVAL OF RAG RUGS.....	By Eliza Oliver 52
THE RESIDENCE OF FREDERICK PHILLIPS CRAIG, ESQ., Short Hills, New Jersey.	By Robert Prescott 54
AMERICAN HOMES AND GARDENS GARDEN COMPETITION. Third Garden Prize of Twenty-five Dollars Won by Anthony P. Finder, Troy, New York	56
THE SUMMER HOME OF H. A. GOODWIN, ESQ., at Marblehead, Mass....	By Lillian Harrod 59
OLD TIME CLOCKS AND THEIR MAKERS.....	By Mary H. Northend 62
SOME WESTERN HOMES—Costing from Three to Five Thousand Dollars.	By Francis Durando Nichols 65
THE WORLD'S LARGEST SWANNERY.....	By Harold J. Shepstone 69
AN AMERICAN FORESTRY SCHOOL.....	By Day Allen Willey 71
THE RESIDENCE OF ROBERT HOLT, ESQ., at Summit, New Jersey.....	By Paul Thurston 74
FURNISHING THE FLAT—II. The Drawing-Room.....	By Lillian Hamilton French 77
HINTS FOR THE HOUSEHOLD.....	By George E. Walsh 80
Garden Competition Announcement for 1910. American Homes and Gardens for March.	
Correspondence	Garden Notes
Destruction of Wood Borers	Grinding Cement
A Timber Famine Predicted in Twenty Years	
Brick Roads for the Automobile	New Books

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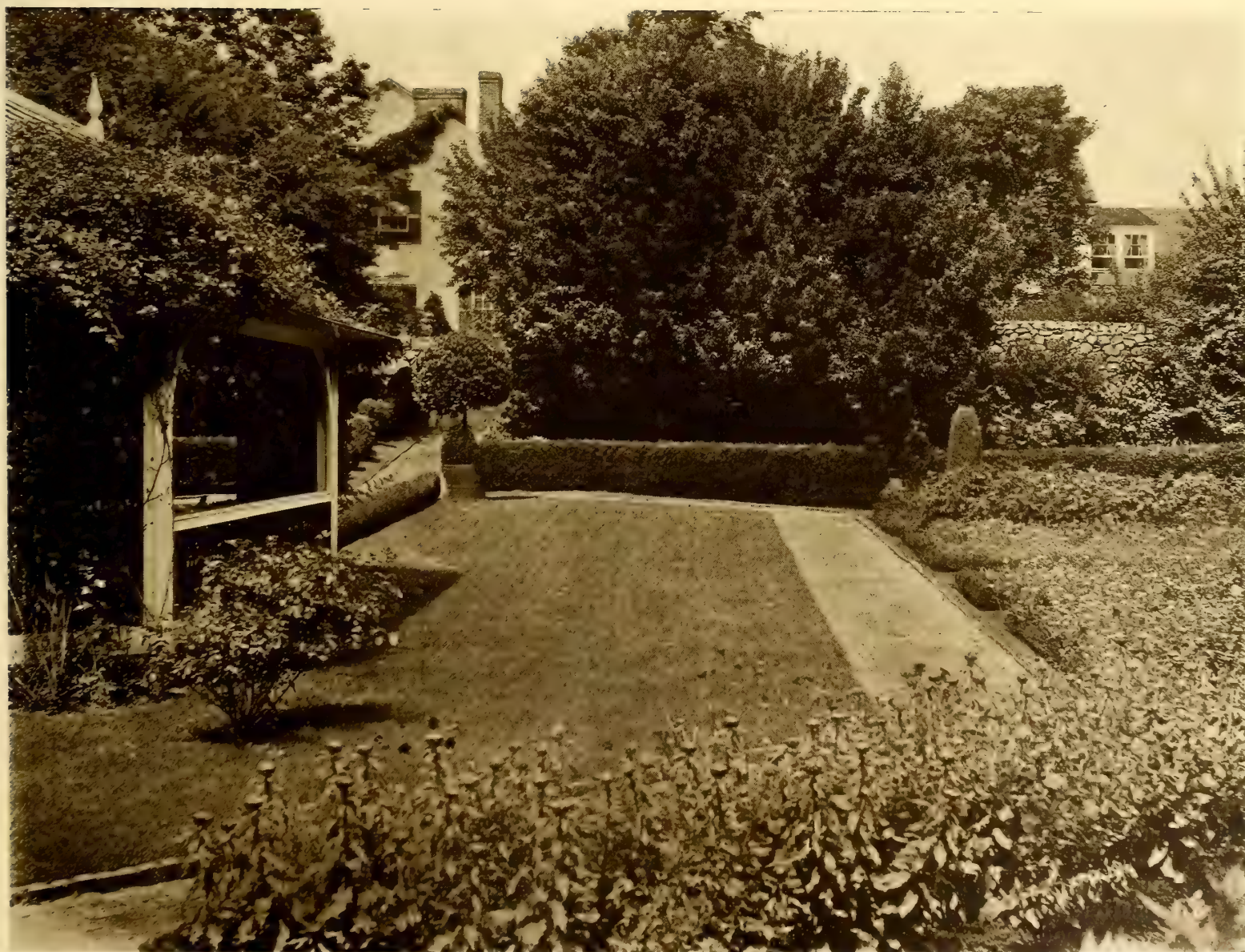
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"Hill Stead:" The evergreen-bordered walk from the house into the garden

AMERICAN HOMES AND GARDENS



"Hill Stead:" The summer house and garden

Monthly Comment

Public Improvements in the Country



IT IS quite natural, in this age of improvements, that the country itself be improved. It may be a bit staggering to those who have learned to contemplate nature in her most natural moods, and to love her, to be brought to realize that the country, like the town, is in need of betterment; yet nothing is more true than this, and the great wave of demand for improvements and betterments that is sweeping over the land has its zealous army of supporters in the rural regions. To such an extent is this true that in some districts there is scarce a foot of countryside that does not expose an "improved" surface to the, as yet, unimproved sky.

TO THE rural mind, and perhaps to some others, the question of public improvements offers no difficulties. You simply improve, and all sorts of beneficial results happen. There is the beneficent and fundamental effect of the improvements themselves; there is the great proportionate increase in the valuation of your own property, an increase you first note in the swollen size of your own tax bills—but a mere detail; there is the additional attractiveness of the region for new settlers—who likewise help to increase valuations and hoist up taxes; there are advantages you offer to people who do not live in your community, pay no taxes, assume no part of your burdens—the people who go joyously skimming over your roads, raising perpetual dust and endangering the lives of your family and your stock.

FOR public improvements in the country begin, as a rule, with the roads and end at precisely that point. The country is as yet too unsettled for matters of general sanitation to be considered, and that perhaps is unnecessary; the road remains the prime theme for rural improvement. And the roads are the salvation of the country. They both take people into it and they permit them to come away from it—both blessings of very different kinds. A good road is a valuable asset to any community, and a beautiful road is a pearl beyond price, a prize of the first rank, a possession that sums up and embodies both profit and beauty. It is without doubt the most advantageous of all things rural made by man.

UNLIKE plants and trees and shrubs, roads do not merely "grow"; they require to be made; they need to be scientifically made; they demand care and knowledge and attention and imagination in their construction. If they are new roads they must be laid out with some regard to the rights of the property owners whose land is taken or by whose territory they pass. If they are old roads made over, the matter is one of positive delicacy, since the habits and customs of a hundred years—or less—are wedded to definite landmarks and all sorts of animosities may be aroused by well-intended advances.

THE making of a road is begun with the engineer, and in many quarters is supposed to be completed with his engagement. A good road needs more than the services of a good engineer; it needs the imagination of the artist. All roads have a scenic and artistic value which is actually

of more importance than their adherence to a straight line. They have, moreover, an aspect to-day that they will not have to-morrow or twenty years from now. They have a relationship to the landscape that is really more important than serving as a gage for tax valuations. All these matters enter into the construction and determination of a road in a manner quite as important as the structure of the road-bed and the question of repairs. Yet every one of these most important things is often overlooked in the construction of a road. The simple truth is, the road must be designed with the care and the imagination that any work of art is designed with. Its design is infinitely more important than its construction, because the latter can always be bettered; whereas if the former is neglected or faulty, a fundamental error has been committed for which there is no remedy.

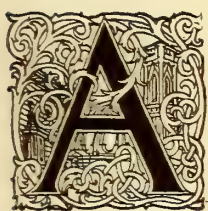
RURAL public improvements, like everything else of importance, require to be carried out in a competent way by competent people. The man with an axe can clear a path through a forest, but he is clearly not the one to carry out the construction of a modern road. The proof of competency is the attainment of competent results. Local improvements everywhere throughout the United States are in the hands of local bodies, the constituent members of which have been lifted into office without any regard to their competency for carrying out rational schemes of public betterments. Having always managed their communities in everything else, why not in the making of roads? Yet there is no phase of country life that so urgently calls for the services of the specialist. It is no exaggeration to say that he is not only needed, but is needed at once in at least a million places. And needed very greatly.

IF PUBLIC improvements in the country sometimes fail by reason of the incompetency of the persons who assume to carry them out, there is another group of betterments coming directly within the purview of the owners own rights, which he himself can perfect and which constitute, in most cases, the most notable contribution of all to rural improvements. These are the individual betterments that one carries out on one's own property. Most private property improvements are made with a view to the owner's own advantage, and they are apt to be of a personal character, that is, not related to the betterments of one's neighbors and having a distinctly personal and individual character. This, however, is no detriment. There is no finer public improvement, so far as roads are concerned, than a succession of handsome places handsomely treated, developed, planted and arranged on their border lines. Nor, indeed, does a place need to be handsome or gaudy to contribute its quota to the public betterment, for a succession of small places, artistically treated, are as much a contribution to public art as the most grandiose of estates. And the personal note in this private work is often of a greater value than the more uniform undertaking carried out with rod and line. At all events the border line of a property is the precise spot where the individual owner may make his personal contribution to the vexing question of public improvements in the country.

Notable American Homes

By Barr Ferree

"Hill Stead," the Estate of Alfred Atmore Pope, Esq.,
Farmington, Conn.



MODERN house at Farmington is so much of an anomaly as to be quite unthinkable, did it not actually exist. The fine, old-time character of this quaint old town is of so penetrating a quality that, it would seem, even the new buildings must be permeated with it. But strongly developed as this quality is here, it is obviously impossible to retain it to-day unless one builds in the old way, steeps oneself in the old traditions, and conforms, as far as modern necessities permit, with the old ideas. It is, of course, not impossible to do this, but it may be frankly said at the outset that it has seldom been so well done as Messrs. McKim, Mead & White, the architects of Mr. Pope's fine house, have realized here, supplemented with the zealous assistance of Miss

Pope, to whom much of the interior treatment is due. And now that the house has been built, the grounds laid out and planted, the whole estate brought to a fine condition of flourishing maturity, it is easy to see the leading factors that, in the creation of this beautiful house and grounds, dominated the ideas of the owner and his architects. It is not necessary to set them down in order of importance, but it is very apparent that here were considered comfort and convenience, ampleness of size, a feeling for the past, a love of fitness, and a regard for quiet in design that was content with agreeableness of result without any appeal to over-elaboration.

That the house is of a type generally called "Colonial" goes without saying; yet, as a matter of fact, its prototypes are rather the farmhouses of the early Nineteenth Century



It is precisely the kind of house one would naturally look for in Farmington



The summer house in the garden



The walk into the garden

than the true Colonial period, historically speaking. Mere epochs of style, however, are comparatively unimportant compared with the appropriateness of the design and its

suitability to the requirements put upon the structure. To sum up, therefore, it is sufficient to say that Mr. Pope's house is precisely the kind of a house one would naturally



Beds of old-fashioned flowers growing with the brilliant luxuriance of plants that spare nothing in their blooming

look for in Farmington, and, admirably suited to the locality in a general way, it is especially suited to the particular place, the precise spot on which it is erected.

The house is actually much larger than any single photograph is apt to suggest; for in addition to the dwelling the ample back buildings are connected with shed, carriage house and stable, all of which can be reached under cover, a convenience by no means to be despised in a cold New England winter. This group of buildings is, therefore, an extensive one, and as each part is ample in size in itself, the whole series covers a good deal of ground. Of land, however, there is an abundance, the estate comprising about two hundred and fifty acres. The house stands on an elevated

a slender railing, meets the steeper slope of the house roof, which is pierced by three dormers, the middle one being the largest, and having a triple light. The roof is shingled, the house walls boarded; the piers of the porch square and panelled, and its cemented floor but two steps above the ground. The motif of the piers—a plain recessed panel in each face—appears again and again in every part—on the house angles, on the bay window, on the lesser piers of the wing porches; nothing could be simpler, yet it is the leading detail-motif in the whole design.

As originally built the house was symmetrical in design, with identical wings, one on each side of the centre structure. They were provided with great sloping roofs that



The hall is of the old type, and is a rectangular passage through the centre of the house

plateau; behind it rise a range of hills; below it, the land slopes gradually down to the town.

To all intents and purposes, therefore, we have here a fine old time farm house; not a reproduction, not a duplication of another building, not a grouping together of various parts from various structures; but a quiet harmonious design, worked out in the style of its period, with detailing of the most careful kind, a house that is at once scholarly and refined, modern and old. Entirely consistent in all its parts, it has the fine character of the old house, and all the comforts and conveniences of a new one.

There is a great central building, rising in generous dimensions behind a porch whose ceiling is above the windows of the second story. Its sloping roof, partly hidden behind

came down to the porch eaves in front, but which at the back were stopped above the windows of the second story. This structure still remains, but the porch on the left has been enclosed and now forms a part of the new library added to that side of the house. It has a bay window similar to the older one built beneath the great portico, an arrangement that adds to the symmetry of the main front, although the parts are actually irregular. Everywhere there is ample wall spacing, with large rectangular windows, broad sloping roofs and completely restrained detailing. A very minute detail is the exposure of the nail heads in applying the outer sheathing. The house is painted white, with green blinds.

The interior plan presents no points of complexity. The rooms are large and square and offer a direct relationship



The spacious dining-room is finished and furnished with the old-time character of the house



The first of the two great libraries; wood-paneled and walled with book shelves

with the exterior. While there has been no effort to provide only furnishings that correspond with the period of the house, there is much old furniture in it, and the properties of historical relationship are observed much more closely than is usual in the modern house of old-time character. This is especially noticeable in the wall coverings and the carpets. The latter are, for the most part, in soft tints of brown, and were made to order from old-time designs. The wall-papers are quite as distinctive in their patterns. In the hall is a block pattern of genuinely antique design, while the "parlor-bedroom," on the first floor, has a paper printed in England expressly for it, from re-touched wood blocks seventy years old.

reaches across the rear of the house, with windows on the north and south ends. Two great beams cross the ceiling, dividing its plain surface into three panel areas, of which the most central is much the largest. A handsome bronze chandelier depends from each beam. The woodwork is grained in the old-fashioned style. The walls above the wainscot are hung with a brown paper containing a very slight figure. There are bronze wall-lights of antique pattern, and the furniture is fine and old—chairs, tables, side-board, serving table, china closet, the latter thronged with a rich collection of beautiful pieces. The furniture covering is black figured haircloth, and the window curtains are of soft brown velvet with white sash curtains. The carpet is



The upper hall contains a rich collection of old furniture

The hall conforms to the old type, and is a rectangular passage running through the centre of the house. On one side are the stairs, a simple straight flight that rises to the second floor without turns. The balusters are plain, square uprights without ornaments, surmounted with a polished rail. The woodwork here is pine, treated in "old bone," a blending of colors and a final glazing of the surface that have yielded results of remarkable beauty of finish, almost approaching the transparency of Japanese lacquer. The wall-paper is in shades of brown on a white ground. Tables, davenport and chairs of the old days furnish the hall, and on the ascending wall of the stairs is a fine collection of engravings and prints.

The dining-room is at the farther end of the hall, and

in shades of red brown. The mantel is wood, and the fireplace has a polished marble border with brass facings and brass andirons and fender. The paintings on the walls are, of course, modern, and are a part of the collection of masterpieces accumulated by the owner of this beautiful house.

The whole of the front portion of the house is about equally divided between public and personal rooms. The former comprise the suite of drawing-rooms on the right of the hall; the latter an even larger suite of libraries on the left. The drawing-rooms differ in size and shape, and are L-shaped, in plan. The wall-paper is striped in two tones of olive, with a narrow festooned border, above the simple wood base, treated, like all the woodwork of the room, with "old bone." The carpet is green, with touches



A bedroom with antique furniture

of red and blue. The window curtains, which are designed with a valence, are rose silk damask with white sash curtains. Both series are held back by cords fastened to buttons or ornaments in pearl and clear glass; those of the sash curtains are smaller than those of the damask curtains. The bay window of the main drawing-room has built-in seats with cushions of olive velvet. The mantel is wood, with facings of mottled black marble and iron frame with brass trim and brass andirons and fender. The furniture is, for the most part, of old type, but modern comforts have not been overlooked, and a definite character of interest has been required of each piece that has gained entrance to these rooms. Rose damask is the prevailing material for the coverings. The porcelain treasures here are of penetrating beauty, and the magnificent paintings are again modern masterpieces.

Unlike many libraries in large houses, those of Mr. Pope's are real libraries. That is to say, they are literary rooms devoted to literary purposes. The walls, for the most part, are lined with shelves from the floor to the ceiling, and they are thronged with the books of the book-lover and student. The bookish character does not cease with the book-lined walls, for on the panelled surface around the fireplace are portraits of authors and rare old engravings that are favorite objects of study. The furnishings, as elsewhere, are entirely harmonious with the style of the house. The color treatment is brown, with brown carpet, curtains in two tones of brown silk damask, and brown furniture coverings. The woodwork is grained in the old style, and is dull yellow in color. The library comprises a suite of three great rooms. The first, which opens directly from the hall, is the original library. Beyond it is the new library, a larger room recently added to the house. Still farther on, and on the extreme side of the house, is Col. Pope's personal office. It is several steps below the other rooms, and is completely panelled in walnut. The carpet here is gray. There is a passage behind the stairs in the hall which leads to the "parlor-bedroom" on the first floor. The

unique character of its wall-paper has already been mentioned: it is in stripes of white, with festoons in light colors. The side of the room containing the fireplace is completely panelled in wood, painted white, as is all the woodwork. The mantel is wood, with facings of mottled yellow marble and a lining of hammered iron; the fender and andirons are brass. There is a splendid old brass triple mirror above the mantel shelf. The window curtains, bed-hangings and furniture coverings are pink and white striped silk, the bed being a fine old four-poster, of which the house possesses an unusual number. A bathroom, which was added when the new library was built, makes this suite complete in itself.

The charming old-time character which distinguishes the arrangement and furnishing of the first floor of the house is carried out with equal consistency in the second story. The hall reproduces the dimensions of the first floor hall, and, like it, is papered with the block paper, and is abundantly furnished with a delightful col-

lection of old-time tables and chairs. Even more marked is the character of the bedrooms. The utmost harmony prevails in their furnishings. That there is a marked individuality and distinction in the different chambers may be pointed out without further comment; but the collection of old furniture arranged in them, delightful four-posters, the old-time dressing tables and bureaux, the chairs, the mirrors, the whole thing, is so well done and so beautifully carried out, that one hesitates to leave one room until a glimpse of a new attraction in the next draws one farther on, only to have one's feelings stirred the more with each new and more successful chamber.

The green bedroom has a green carpet with small red dots, all but invisible. The wall-paper is light blue, with a white trellis carried around bunches of green flowers. The fireplace has a blue marble band in its facing, and above the mantel is a fine mahogany mirror. The curtains and furniture covering is figured cretonne.

The mulberry room is equally characteristic. The wall-paper has a lavender ground with a pattern of small dia-



The "parlor-bedroom" of the ground floor

monds containing mulberry flowers. The bed-hangings are white; the curtains and furniture coverings cretonne. As in all the bedrooms, most of the furniture is antique.

The house is approached on the side, there being no driveway to the portico of the main front. Here is the carriage porch, an arcaded structure that leads out of a deep porch furnished as an outdoor dining-room. It is glazed in front, and connects with the dining-room and a passage that leads to the service rooms. Almost in face of this, but with an entrance not symmetrical with it, is the garden. It lies below the house on the hillside, and is enclosed with a wall of rough stone laid up without cement, affording a fine clambering place for vines and roses. This enclosure is not that of the garden itself of this great area, and has its own garden enclosure of hemlock. Entering the walled space, which is bordered without by evergreens, one descends by stone steps to a lower path of old brick, box-bordered, and thence to the hemlock hedge that bounds the garden.

In the midst is set a summer house, with sides partly open and partly trellised. The main lines of the frame are painted white, the trellis is green. All around are beds of old-fashioned flowers, growing with the brilliant luxuriance of plants that spare nothing in their bloom, and which are planted in great masses. It is a charming place, and one of great simplicity. It scarce deserves the name of formal garden, for while the beds follow somewhat the shape and form of the great irregular octagon of the enclosure, it is rather that they may have definite form than a pattern of definite design.

In one corner of the outer enclosure is a short flight of stone steps beneath a pergola covered with grape vines. Above, and without, is the conservatory, the path beside it being dahlia-bordered on the right and left, splendid lines of the most brilliant colors, blooming with quite audacious loveliness, and offering, apparently, an endless variety of shapes and colors.

Both from this point and from the house the stable yard may be reached. The buildings here are new, the original stables having been destroyed by fire in the spring of 1908. They constitute a somewhat irregular group, most extensively developed on the rear. In face, as has been stated,

they adjoin and connect with the house. The garage is of stone, with wood gables, and forms a portion of the group to which the conservatory is attached.

The summit of the hill on which the house is built was originally bare of trees. Some fine old monarchs of the forest now stand about the house and seemingly have always done so. As a matter of fact, while the trees are necessarily old, their present position is quite as recent as that of the house, since they were all transported here by Mr. Pope when his house was built, and are now as sturdy and as flourishing as if they had never known another home.

The house stands literally on a hill or knoll that slopes down grandly on all sides, but the house area is so broad and spacious that the dwelling is quite without that sense of aloofness that characterizes most hill-top buildings. There is a majestic outlook from the front porch. The green lawn dips down suddenly below the stone wall built exactly at the crown of the rise. Beyond are the tree tops of the lower valley, and far off the land rises again, with trees and fields so remote that the few houses are the merest dots in the distant landscape. Beyond are great broad hills, stretching away as far as the eye can see, from one side of the horizon to the other; rising up and off in ridge after ridge, until, literally, there is no more to see save the remotest outline against the sky.

The outbuildings of this fine estate contribute a really notable group of structures. But their interest lies rather in their adaptation to ends, their convenience and accessibility, their sturdy walls and their simplicity than to architectural design. The buildings, as has been intimated, are close to the dwelling house, yet while no attempt has been made to conceal them, they are not visible from the front, and one hardly realizes their existence at any point of approach. This is an achievement of no mean order, for an extensive group of outbuildings is apt to occupy a distinct place in any general view of a country place, or else they are located at such a distance from the dwelling as to seem to be deprived of the convenience that comes with closeness of proximity. The outbuildings of Hill Stead are entirely modest, simply designed, direct and sturdy as those of an ancient farmhouse; yet they are very modern, very compact, very complete and ample in every respect.



The old-time garden below the house

The Revival of Rag Rugs

By Eliza Oliver



IN THE widespread admiration for old household things, old furniture, old china, old pewter, old furnishings of every sort, it is quite natural to look for a revival of the rag rugs of the old time. Almost everything in the way of old furnishings has survived from the antique past of America except floor coverings. In the very nature of things these articles must be the rarest of all ancient survivals. The old chairs and tables were carried up into the attics; the old china and glass ware were thrust further and further back into the closets or hidden away where they would not be seen; but the old carpets and rugs were bundled forth joyously to the ash-heap or the bonfire, and a constant peril of moths gaily dispensed with and utterly destroyed with a veritable sense of housewifely care and thrift.

I exaggerate, of course, when I hint at the total destruction of such articles, for some have survived, and in some quiet old parts of the country these survivals have been fairly numerous. But taking old furnishings as a whole, it must be apparent to anyone who has given the matter some thought, that floor coverings are the rarest of all survivals. And not only is this true, but until very recent years there has been no adequate modern substitute for these very important articles. The housewife who has tried to find a floor covering to go with her old furniture—newly brought out from its hiding-place, retouched and repaired “as good as new”—will, time and again, find nothing at all that either seems suitable or which in any way appears to be of the period of her tables and chairs.

And, indeed, the problem is a hard one. No old room can be adequately reproduced without its appropriate floor covering. The Oriental rug, even in its most modest pattern and most subdued colors, is manifestly inappropriate, since our ancestors made no use of such articles, ancient as their use in their own environment may be. The modern carpet, until very recently, is equally inadmissible to rooms that seek to retain the old-time atmosphere with any degree of accuracy. A real problem was presented here of more than usual complexity, a problem so difficult to solve, and so very general, that many a good room to-day which is filled with excellent old furniture, and which, while in every part giving evidence of thoughtful care for old-time atmosphere and feeling, is still imperfect and indeed unfinished with its incongruous floor covering. No wonder, then, when old rugs and old pieces of carpets came to the light through

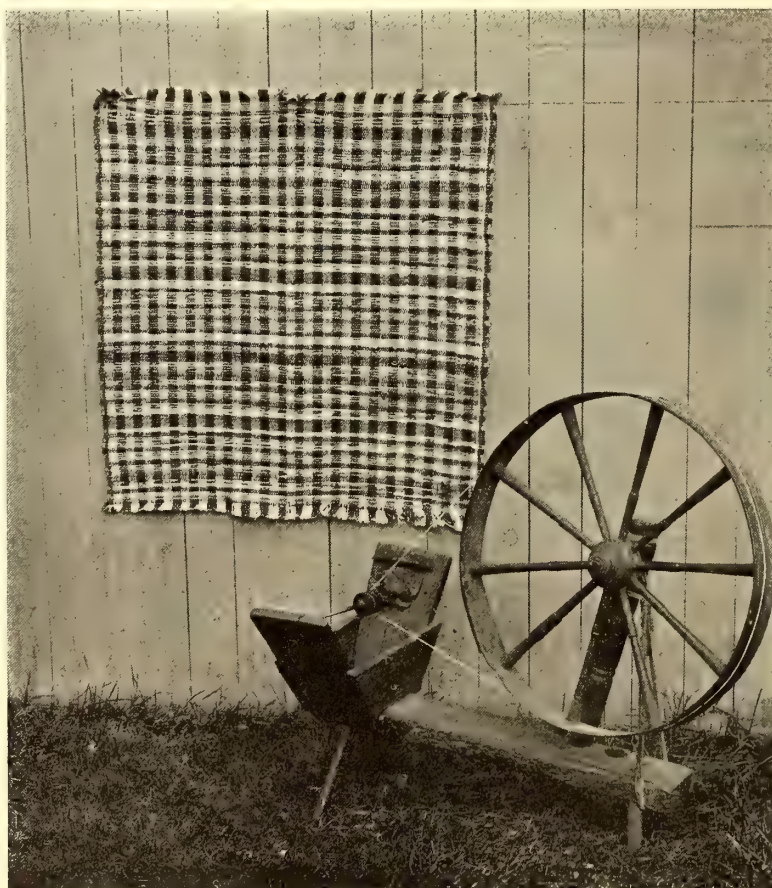
arduous research and much anxious seeking, that they were hailed at once as the long-lost missing-link in the modern reproductions of old furnishings. And no wonder, if you please, that the supply of genuine antiques of this sort was speedily exhausted. Many fragile articles have survived from the past, but while carpets and rugs cannot be classed as such, their material forbade their preservation and their rarity is very great.

But the old-time rug having been recovered and its essential place in house furnishing recognized, the next step was its reproduction as a modern article. This industry is now well developed, and every carpet store has its stock of modern rugs and carpets which either accurately reproduce known antique patterns, or which reproduce the old spirit in a new form that renders them admirably adapted to modern use in the most careful combination of old-time furnishings.

Miss Adalaide Sprall has been most successful in this work, and has kindly loaned me photographs of her looms for reproduction, with this article.

The reproduction of old rugs and carpets has not, however, been left to the carpet manufacturer. Interest in this work having been aroused, fresh searches among the old houses and outbuildings were made, and not a few old-time looms have been recovered in the very localities in which they were formerly utilized. And, being discovered, it was but a step further to put them into use again, and restore the weavings of rugs and carpets to its former dignity of a household craft.

The work done in this direction has been very widespread and immensely successful. Women who, but a few years ago, hardly knew there was such an art as rug weaving, are to-day turning out beautiful speci-



A Martha Washington carpet

mens of home-made rugs that have, many of them, all the merits of the antique rugs. For the old rugs were likewise home-made, and the modern worker needs but the old patterns to produce work of the same old spirit.

The good people who tell about the triumphs of the home worker in this and in many similar directions, have much to say concerning the utilization of the time so employed. They draw a picture, or attempt to draw it, of rural home life, in which the good housewife has lonely and unoccupied hours, with nothing to do and nothing to think about. And then they advance a still more alluring portrait of the craft worker, busily engaged in some domestic art that she will send to the shop and exchange for useful dollars. It is a beautiful picture and a fascinating one. And surely it is true; for is it not set down in the

books and magazines? Yet I have sometimes wondered if all this home industry is quite right.

The women I know, and the women I have seen, have little time for work of this description or for concentrated effort apart from the daily routine of ordinary household effort.

Far be it from me to decry the sacredness of that effort, for it is most righteous and necessary.

But I do not believe that the average woman — I mean the woman of average ability who has the average duties of every woman to perform—can find much time for this sort of work. Some do, undoubtedly, and all praise is due them for what they accomplish.

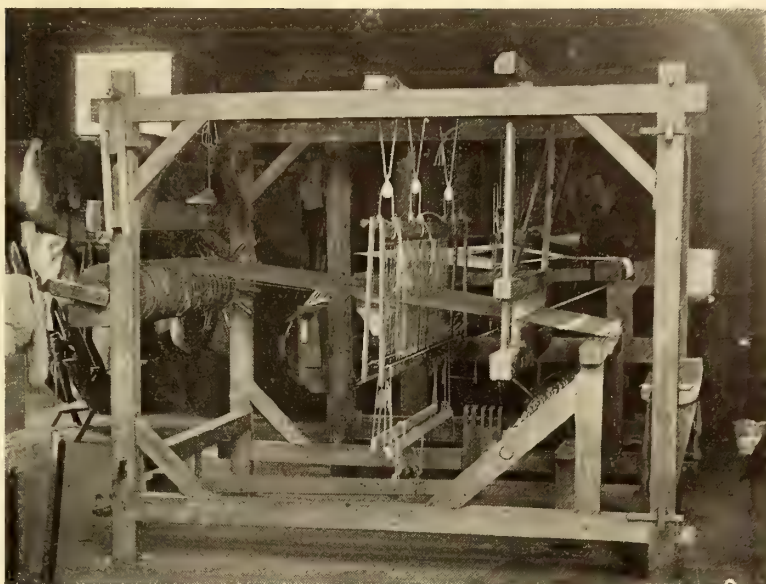
Yet many women do find time for this work, and produce beautiful results.

It is fascinating work, too, and very absorbing.

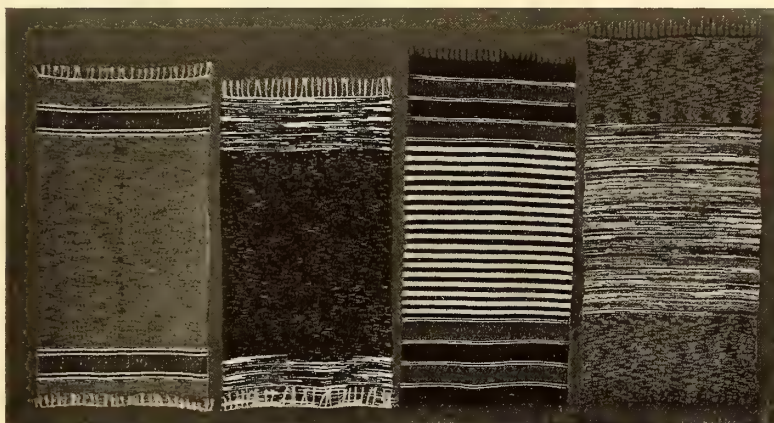
The story is told—and I believe it to be authentic—of a woman rug maker who had exhausted the supply of black she had on hand for a certain pattern.

The work was nearly finished, but everything had been brought to a standstill.

"Where are your bloomers?" inquired an interested neighbor. They were produced with some protest, but they were finally reduced to rags and put into the pattern. Even this sacrifice was incomplete, and the work was again stopped. "What is the matter with your skirt?" queried the



An old-time loom ready for weaving



Home-made rag rugs



The oldest warping bar in Connecticut; the lower still in use

resourceful neighbor; and that, too, went into the rug. Contributions of this sort are not always needed, but the incident surely shows the extraordinary interest one may develop in this work.

And meanwhile the fortunate possessor of these modern home-made rugs has something to be envied for.

They are good rugs, most of them; beautiful rugs, too, rugs to be prized and enjoyed.

They are the kind of rugs we are glad to have.

If there be women who have the time for this work, so much the better for us.

They have an agreeable occupation of quite absorbing interest, and we have the beautiful results of their labor.

It is impossible to imagine a more desirable resultant.

The modern rag rug, woven at home, and reproducing either the old design or the old spirit, has, then, a definite place in the household of to-day. Its real place is with old-time furniture and in old-time rooms; but as an agreeable and handsome floor covering it has a place of its own that nothing else can take.

An interesting aspect of the old revival is the freshening of people's thoughts as to floor coverings. It is something to know that any sort of a rug or carpet will not do for every place, and it is a useful thing that people should ponder on such matters and consider the relationship of the floor.



The
Residence of
Frederick Phillips
Craig, Esq.
Short Hills, New Jersey



By Robert Prescott



The dining-room is finished in mahogany



HE residence of Mr. Craig is both a summer and a winter home. It combines all the best features of modern building, including attractive elevation of the gambrel-roof type, and well-arranged floor plans. The house is thoroughly equipped with all the best modern appointments.

The house stands on a knoll which rises up from the two roads which extend along both sides of the property. A sweeping roadway extends from the main entrance of the estate to the entrance porch placed at the front of the

house. Fine old trees which have been growing on this site for years form a very happy surrounding for this old Dutch Colonial house.

The foundation is built of rock-faced stone, while the remainder of the building is constructed of wood; the exterior walls of the first story being covered with clapboards painted white, while the second and third story exterior walls are covered with shingles stained and finished in a soft gray color. The roof is also covered with shingles. The hall, which is reached from the entrance porch at the front of the house, is trimmed with cypress finished in a



The living-porch is placed at the side of the house



The hall has a brown-finished trim and a two-tone gray wall covering

Flemish brown, blending well with the two-toned grayish-brown wall covering. The staircase is of ornamental character, and has yellow pine treads, with brown-stained risers and balustrades. To the right of the hall is built the living-room, which is also stained and finished in Flemish brown. It extends the entire depth of the house, and at the rear end of which is built a bay-window furnished with a paneled seat. Opposite the entrance to the living-room is built the fireplace, provided with buff-brick facings and hearth, and a paneled mantel. A panel wainscoting to the height of the mantel-shelf extends around the room, and is finished with a plate-rack. The wall space above the

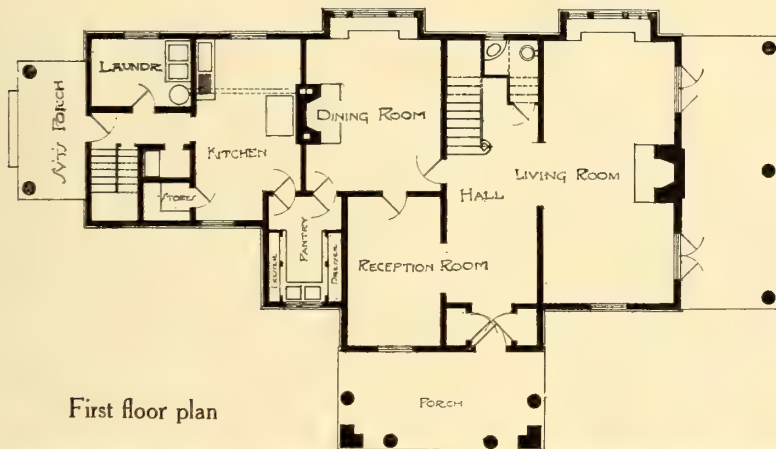


The fireplace in the living-room

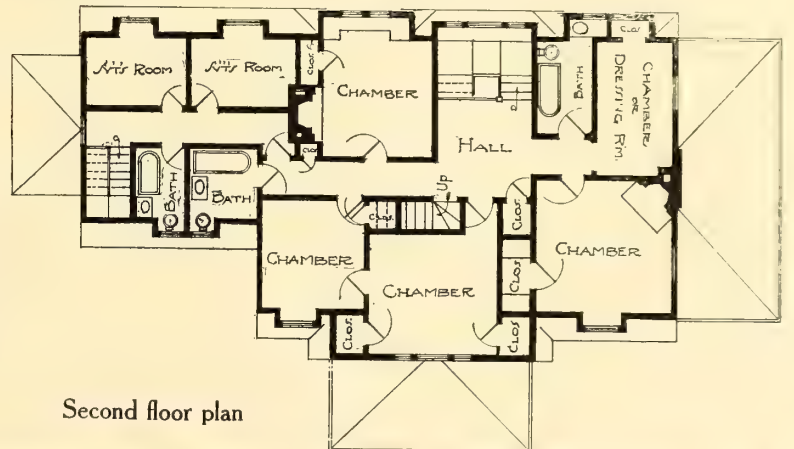
plate-rack is covered with a Japanese wall-paper in two tones. The ceiling is beamed.

French windows open from the living-room to the living-porch, which is built at the side of the house, thus insuring the privacy to the family which is so necessary in a country house. Opposite the living-room is built the dining-room, which is finished in mahogany. There is an open fireplace, provided with white brick facings and hearth, and a Colonial mantel. The reception-room, to the left of the entrance, has a white painted trim, and walls covered with a white and gray paper.

Messrs. Rossiter and Wright, of New York, were the architects of this house.



First floor plan



Second floor plan



The house rests in a group of pine trees

American Homes and Gardens Garden Competition

Third Garden Prize of Twenty-five Dollars

Won by Anthony P. Finder,
Troy, New York

SEVERAL years ago, in the early autumn, I moved into a new home in one of the outlying sections of the city of Troy, known as the "East Side." Nearly every residence in this section has a lawn surrounding it, supplemented with more or less effort in gardening. With the coming of the first spring in my new home, I became imbued with the idea of growing some flowers. As is the case with

This plot is back from the street about one hundred and fifty feet at the end of an open extended lawn. Although unenclosed on three sides, the garden is so situated that no one has ever molested any plant or flower grown therein. The object of locating the garden so far in the rear was to fill it with vegetation and foliage, so that at once, on the opening of the summer season, a marked contrast would be presented with the open sweep of the closely cropped lawn in the foreground.

The soil of the garden is rather loamy, with considerable sand intermixed. Twice a year, in the early spring and late in the fall, this soil is well spaded and loosened, care, of course, being taken not to disturb the roots of any of the perennials planted in the garden. These perennials, as a rule, are transplanted in the early fall, and their clumps of roots, when necessary, divided at that time. I have found it very essential to have the ground thoroughly spaded and all surplus



The stable at the end of the lot is nearly hidden from view by a mass of low-growing shrubs planted in front of hydrangea and canna

any beginner, I had no practical experience, and for some time groped in the dark.

Our first attempt was to have a few scattered beds here and there, but as the season advanced, and we were greeted with a general unsatisfactory result, we began to think the matter over, and decided that one garden planted under a general plan and scope promised far better results than the previous attempt with a few small, separate, unrelated beds.

This garden occupied a strip of ground extending along the rear of our lot about twenty-one feet wide and approximately eighty-four feet in length.



The garden walk is edged with petunias in brilliant coloring

stones and unnecessary roots removed. My experience is that manure or other fertilizer placed in the ground dur-



The fence line of the estate is hidden by a harmonious grouping of shrubs and plants

ing the month of March will benefit the soil more than if placed there in the previous fall. At the eastern end of our garden there stood for many years a solitary pine, survivor of a grove which formerly flourished in this section. Under this tree several years ago, a summer house, triangular in form, was built, the trunk of the pine coming down through the middle of the front. This pine, which had been years in dying, finally succumbed, and was cut down as shown in the accompanying photographs.

A gravel walk along a privet hedge approaches the garden from the south at the eastern end and runs north and west, practically dividing it into halves. The problem was how to fill this garden with plants so that a harmonious mass effect would be presented from either the front along the lawn side, or along the sides of the dividing walk. Years ago a former owner had planted some grape-vines in the south half of the garden plot. These vines were planted about four feet from the edge of the lawn, and were not removed, but were used rather as a partial screen of the garden beyond. An ample trellis was built for the vines, and immediately before this was planted a row of scarlet salvia of the bon-fire variety. The grape-trellis extends towards the west only about half of the length of the garden, so from where it ends a row of red-leaved, red-flowering cannas of the average height of four feet was planted. The space be-

chrysanthemums and hibiscus immediately in its rear. A single clump of heliopsis or iris will, in the course of a few seasons, spread and multiply very rapidly and yield an abundance of blossoms.

To fill the space from the western end of the grape-vine and immediately to the north of the red cannas mentioned above, was rather difficult and at the same time maintain a pleasing effect from either the lawn side or the mid-walk side of the garden. After repeated efforts ending in failure, I found that I could successfully fill this space in question with hardy hydrangeas interspaced plentifully with the nicotiana plants of both the white and pink flowering

tween the edge of the lawn and along the front of the garden and the salvia was filled with two closely planted rows of many varieties of coleus, some of solid and some of variegated colors, intermixed, forming a fitting foreground to the higher salvia, grape-vine and cannas immediately to the north. Coleus is a most tender plant, and should not be set out before May 30th, but with plenty of moisture it is a fine bedder, having an ample growth, few pests to interfere with its progress, and a wealth of foliage which is unrivaled.

The grape-vine casts a shadow to the northward, yet in spite of this drawback I find no difficulty in growing peonies of different varieties, heliopsis, German and Japanese iris,



Masses of phlox and gladiolus are planted along one side of the garden walk

varieties. *Nicotiana* should be planted indoors in flats not later than February. It may be safely set out in the latter part of May. Along the closely cropped edge at the southern side of the midwalk is an edging of single portulacca.

No garden would be complete without a liberal number of asters of the different strains now to be so easily had, and which have been brought to such a satisfactory state of cultivation. For my part, I do not fancy the aster in a bed by itself, because its foliage is, in my judgment, not at all prepossessing; so I have planted asters immediately next to the low plants along the edges of the garden walk.

The northern boundary of the garden is a division wire fence four feet in height. In planting this section of the garden, the idea was to produce a sloping growth from the fence to the edge of the midwalk. Immediately along the fence were planted plentiful clumps of golden glow, which early in the season completely hid the fence.

Next to the golden glow come hollyhocks, larkspur, fox-glove, hardy phlox, sweet Williams, primroses, tiger lilies and dahlias. The single hollyhock is my preference, and, although after a few seasons the plant needs to be replaced, yet I find no difficulty in having a supply of new plants at hand ready to take the place of the older. Hardy phlox gives a bountiful bloom from July to September. The diminutive, ever-spreading primrose illuminates the garden from the middle of June to the middle of July, about the time when the fox-glove, larkspur and sweet Williams are doing their best. No garden, in my judgment, is complete without a liberal clump of primroses. As soon as the larkspur has finished blooming, if the plant be cut down to the earth, a new crop of flowers will be out by the end of August or early September. This second crop, while not the equal of the first, will still help to lighten up the garden at the very time when other plants are past their prime.

As to dahlias, I find that it is better to plant a few good tubers rather than a large, undivided clump. I have had large and more perfect flowers by cutting back the plants and allowing only a few sprouts to a plant. By this method one will not have so many blossoms, but rather more per-



Masses of canna are planted close to the stable

fect flowers and of a finer texture. One of the striking features of this part of the garden has been a row of gladioli which is planted at different times earlier in the season, thus insuring a long succession of the beautiful spikes of this flower, which has within the last few years been so much developed and taken such a firm hold upon the public favor.

At the eastern end of the northern half of the garden is a triangular bed of single, long-fringed California petunias. My experience is that this is a

flower which is never a failure and never disappoints.

Along the northern edge of the midwalk, for several years, I have planted assorted phlox Drummondii. Sometimes the start of this plant is doubtful, but once under way, it flourishes and gives beautiful blossoms of all colors, making a fine contrast with the border of portulacca at the opposite side of the walk. Along the western end of the garden a number of roses are set out.

At the eastern end of the garden, in front of the summer house, is a bed of French marigolds, tall zinnias and castor plants on the north side, and castor plants and caladiums on the south side. From this last group extends a privet hedge, along the side of which are S. A. Nutt geraniums and sweet alyssum bordering the walk which approaches the garden at the east from the south. While marigolds and zinnias are very ordinary every-day flowers, yet they are very plentiful and beautiful, and are never a failure.

A rambler along the side of the garage, and the castor plants along the garage and summer house, offer a fine background for the zinnias and marigolds. Of all geraniums, I find the S. A. Nutt the most satisfactory. This variety may not have as large flower trusses as some others, and may not be, perhaps, as brilliant; yet its richness and dignity, to my mind, cannot be surpassed.

In conclusion, I would say, that to plan and plant this garden has taken a large amount of time, labor, patience and perseverance, to say nothing of the money expended. While we have often been disappointed, yet we have also scored some successes.



A corner of the garden showing the steps to the tea-house



Another view of the garden walk

The Summer Home of H. A. Goodwin, Esq.,

At Marblehead, Massachusetts

By Lillian Harrod



JUST beyond the boundary line that separates Marblehead from Salem, and about half a mile from the centre of the old seaport town, one comes upon a charming cottage home, located on rising ground, some thirty feet back from the main highway, and surrounded on all sides by sloping stretches of sward. This is the all-the-year-round residence of Mr. Henry A. Goodwin, and it was built at a cost of five thousand dollars from plans of Messrs. Peare & Quiner, architects, of Boston, Mass.

At the front it commands an uninterrupted view of meadowland and highway, as far as the bend of the road at Forest Hills station, while at the rear it overlooks the waters of Marblehead Harbor. It is far enough removed from the town proper to insure privacy and quiet, and yet is near enough to avoid the discomforts attendant upon a house too far away from town or city to be within easy walking distance.

In appearance it resembles a modernized adaptation of the Colonial type of dwelling, and it shows in every particular careful planning to suit its location. The severe lines of the gambrel roof are broken by the introduction of numerous dormer windows, which, in addition to being attractive, help render the interior bright and cheery, and there are many other quaint little touches which add to the picturesque effect of the whole.

The exterior finish is of shingle, stained a soft gray, with white trim and dark green blinds.

The front porch, distinctly Colonial in design, is covered with an odd, peaked roof, supported by four Doric columns, with trellis-work arranged between, to afford a foundation for the vines which have been planted to clamber over.

The entrance door, with its upper panel of glass, opens into a vestibule, lighted by means of two long, narrow windows on either side of the doorway, and this in turn connects with the central hall, from the farther end of which a staircase rises by low broad treads to a landing, lighted by a great window, from which another flight of steps ascends to the upper hallway.

To the right of the hallway opens the living-room, a spacious apartment, finished in pine, stained white, and enamelled. Its walls are hung with paper of a striped pattern in tones of gray, pink and white, and its floor is of hard pine wood, highly polished, as are all the floors throughout the house. A large fireplace, constructed of pressed brick laid in white mortar, occupies a prominent place at one side of the room, and it is flanked on the right by a large built-in bookcase, fitted with double glass doors. This room opens at the left onto the broad, double-decked veranda, supported by Doric columns, and rendered attractive by the quaint trellis-work inserted between the pillars. It is fitted up during the summer season as an outdoor living-room, and its slightly elevated location affords some charming views.

From the rear of the living-room opens the den, a cosy apartment, finished in pine and stained a soft brown, while the walls are hung with plain dark green paper. It has a fireplace similar to the one in the living-room, and a closet for magazines just behind the bookcase. Abundant light is fur-

nished by means of a large side window and a bay window, beneath which extends a low broad seat cushioned in velvet, harmonizing in tone with the wall hangings. A large Mission magazine table and a few comfortable chairs constitute the principal furnishings.

Opposite the living-room is the dining-room, also finished in pine, but stained to represent old oak. A high wainscot extends around the sides of the room to a height of eight feet, where it is met with a frieze of field daisies, finished at the top with a cornice of oak-stained pine. A feature of this room is the large built-in china closet at one end, which possesses the advantage of being decorative as well as useful. Broad, double windows are shaded by simple madras draperies, and a large art square partially covers the polished floor. The furniture is of the Mission type, and is in perfect keeping with the simple charm of the apartment.

Beyond the dining-room is the service department, including kitchen and pantry, both fully equipped for housekeeping purposes.

A door opens from the dining-room to the butler's pantry, which is fitted with shelves, drawers and cupboards complete. Another door opens to the kitchen, which is fully equipped for housekeeping purposes. It contains a larger dresser with cupboard below the counter shelf, and shelves above, which are inclosed with doors glazed with small lights of glass. The lobby, built at the side of the kitchen, is large enough to admit an ice box which is a very important feature, for it precludes the necessity of the maid going to the cellar, which is so often the case, and it also provides a handy and convenient place for the ice man to reach the ice box without going into the main part of the house.

The rear stairs lead from the kitchen to the cellar, and they also form a private way for the servants to reach their bedroom, which is built over the kitchen.

The second floor of the house is devoted to the sleeping rooms. The trim of this floor is painted white, and the walls of each of the bedrooms are treated with one color scheme. There are three bedrooms, bathroom and a dressing-room large enough for another bedroom, if the necessity required it. The bathroom is treated with white enamel paint, and is furnished with porcelain fixtures and exposed nickel-plated plumbing. The owner's room is provided with an open fireplace built of red brick, with hearth and facing of similar brick and a mantel of Colonial style. The linen closet is provided with tiers of shelves extending from the floor to the ceiling.

The third floor contains ample storage space, and it also forms fine air space over the sleeping rooms of the house.

The cost of this house was \$5,022.50, divided into separate contracts as follows, viz.:

Excavating and foundation	\$ 545.00
Brickwork and plastering	775.00
Lumber, carpenter work and painting	2,890.00
Plumbing	375.00
Heating	387.50
Wiring	50.00
	<hr/> \$5,022.50



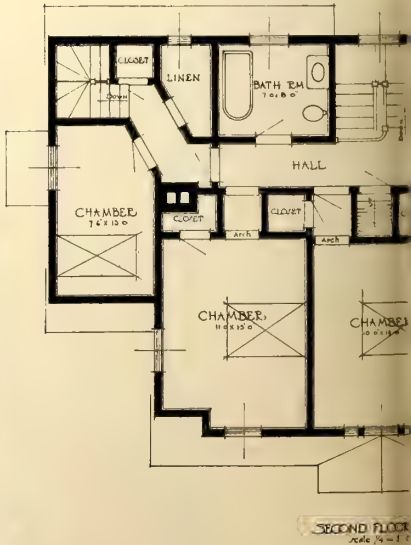
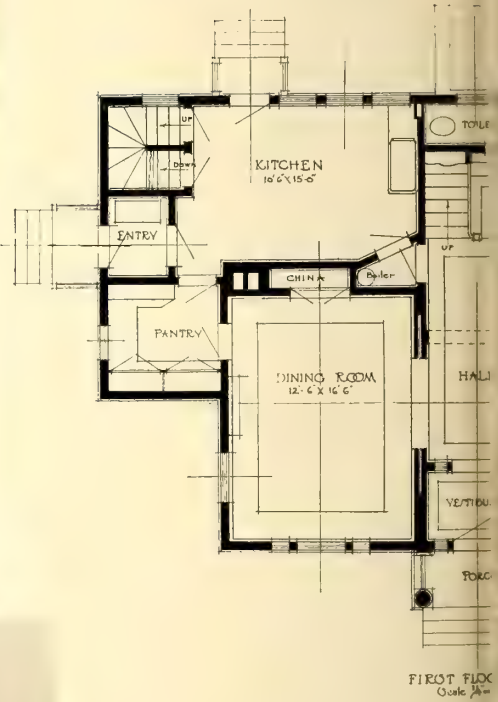
The living-room is treated with white enamel paint and the walls have a striped paper in gray, pink and white



The living-room fireplace is built of red brick and the mantel is a Colonial style



An interesting feature of this house is its living-porch, which is separate from the entrance porch



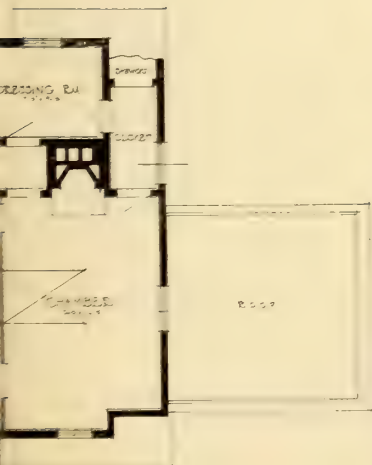
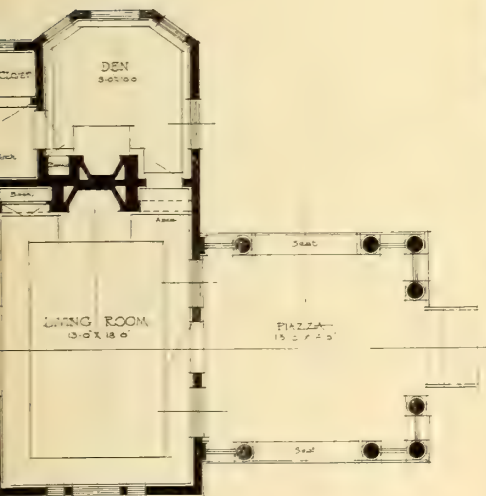
THE SUMMER HOME OF H. A. GOOD



brick laid in white mortar, and it has antel



The dining-room has a high-paneled oak wainscoting, above which is a frieze of field daisies



The Dutch Colonial house is the prototype of this house



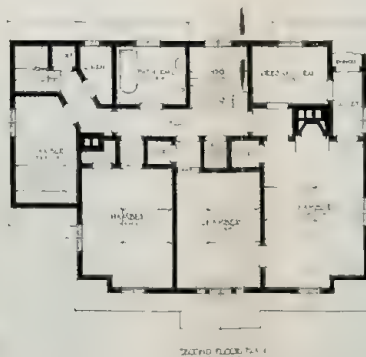
The living-room is treated with white enamel paint and the walls have a striped paper in gray, pink and white



The living-room fireplace is built of red brick laid in white mortar, and it has a Colonial mantel



The dining-room has a high-paneled oak wainscoting, above which is a frieze of field daisies



An interesting feature of this house is its living-porch, which is separate from the entrance porch



The Dutch Colonial house is the prototype of this house

THE SUMMER HOME OF H. A. GOODWIN, ESQ., AT MARBLEHEAD, MASS.



Old Time Clocks and Their Makers



... By ...

Mary H. Northend



FEW people, even admirers of clocks, possess much, if any knowledge of their history, makers and construction. Nowadays the purchase of a clock naturally implies that the clock-case goes with the movement, but in the Colonial times few people bought works and case as one article, at least, not while the large clocks were in use. Transportation was difficult, so the clock peddlers contented themselves with slinging a half a dozen clock movements over their saddles and setting forth to find purchasers. When a family could spare the twenty pounds for a "grandfather" clock movement, the local cabinet-maker was called in, and often another twenty pounds was spent for the case. Of course, certain shaped movements required certain shaped cases, so that definite types of clocks are found; but the case is by no means a guide to the make of the movements.

The first type of American clocks was the wall clock, set on a shelf through which slits were cut for the pendulum and weight cords. These were known as "lantern," "bird-cage," or "wag-at-the-wall," and were replaced by the more imposing "grandfather," which served a double duty of timekeeper, and, as a rule, the show piece of furniture.

Among the early clock-makers of Colonial days was Benjamin Bagnall, who learned his trade in England and settled in Boston in 1712. A record of a meeting of the selectmen of that town, August 13, 1717, reads "That Mr. Joseph Wadsworth, Willm. Welsted, Esq., and Habijah Savage, Esq., be desired to Treat with Mr. Benj. Bagnall About making a Town Clock," and according to a record in September of that year, he was paid for it.

The earliest Bagnall clock on record is of the pendulum type in a tall case. The original case, of pine, is gone, though on the inside of the lower door was written: "This clock put up January 10, 1722." Another of his clocks, and very similar to the first, belongs to the New England Historical Genealogical Society of Boston. The case, though plain, is handsome, and rather unusual, because it

is solid black walnut. In most of the cases a veneer was put on over pine. The use of a pine body is characteristic of old American cases, while the old English cases were veneered on oak.

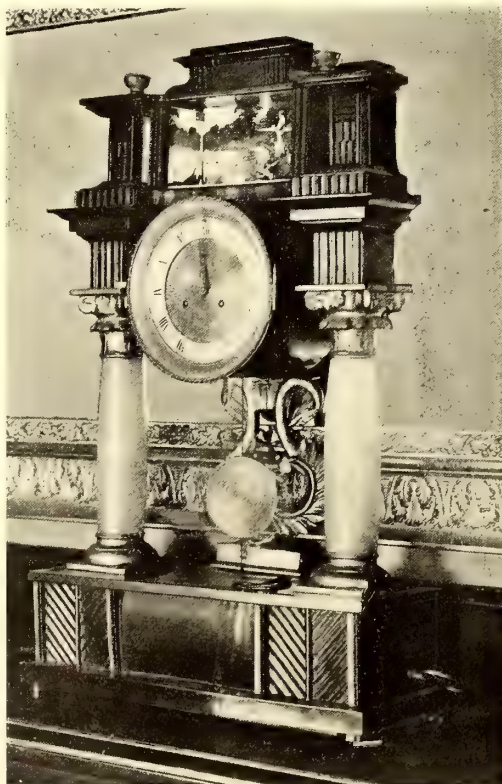
A particularly fine Bagnall clock is in the Hosmer collection at Hartford. It is a black walnut veneer on pine. A peculiarity of the Bagnall make is the small dial, only twelve inches square. Above the dial is an arched extension, silvered, and engraved with the name of the maker.

Samuel Bagnall, son of Benjamin, has left a few good clocks, thought to be equal to the work of his father.

The clocks of Enos Doolittle, another Colonial maker, are not numerous enough to give him a prominent place among the great early manufacturers. Nevertheless, he deserves great praise for the few good clocks which he has left behind. One of them is at Hartford, Doolittle's native town. The case is of beautifully carved cherry, ornamented with pilasters on the sides of the case and face. A circular plate above the dial has the legend, "Enos Doolittle, Hartford." The top of the case is richly ornamented with scrolls and carvings."

There were many small clock-makers in Colonial days, one, we might say, in every town, who left a few examples of their work, but none of them left the number or quality produced by the great clock-makers, the Willards. Benjamin Willard, who had shops in Boston, Roxbury and Grafton, made a specialty of the musical clock, which he advertised as

playing a tune a day and a psalm tune on Sundays. Aaron Willard, a brother, made tall striking clocks. One of his productions, however, owned by Dr. G. Faulkner of Boston, has run for over one hundred and twenty years. On the inside of the case is written, "The first short timepiece made in America, 1784." It is a departure from the ordinary Aaron Willard clock, because it is so short. The case of mahogany stands only twenty-six inches high. There are scroll feet, turning back. A separate upper part, with ogee feet, which can be lifted off, contains the movement. Simon Willard, another brother, in 1802 patented the "improved timepiece," which later was known as the "banjo,"



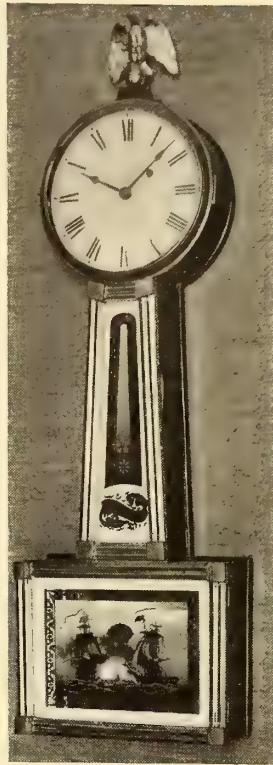
An old French clock in the author's collection

because of its resemblance in shape to that instrument. The "banjo" which Willard manufactured had a convex glass door over the face, a slim waist with brass ornaments running parallel to the curve of the box, and a rectangular base which was sometimes built with legs for a shelf, sometimes with an ornamental bracket on the bottom, in which case the clock was intended for the wall. The construction of these clocks was simple. The works were of brass, and capable of running eight or nine days. There was no strike, but this clock was a favorite, because of its accuracy.

Hardly less famous than the Willards was Eli Terry, born April, 1773, in East Windsor, Connecticut. Before he was twenty-one, he was recognized as having unusual ingenuity at clock-making. He had learned the trade from Thomas Harland, a well-known clock-maker of the times, had constructed a few old-fashioned hanging clocks, and sold them in his own town. He moved to Plymouth, and continued to make clocks, working alone till 1800, when he hired a few assistants. He would start about a dozen movements at a time, cutting the wheels and teeth with saw and jack-knife. Each year he made a few trips in the surrounding country, carrying three or four clock movements with him, which he sold for about twenty-five dollars apiece.

The first known Terry clock was made in 1792. It was built with a long handsome case and with a dial, silver-plated, engraved with Terry's name. This clock, just as it was when Eli Terry set it going for the first time with all the pride which he must have had in his first accomplishment, is now in possession of the Terry family.

Terry introduced a patent shelf clock, with a short case. This made the clock much more marketable, because it was short enough to allow of easy transportation and at the same time offered the inducement of a well-made and inexpensive case. This patent shelf clock was a surprise to the rivals of Terry, because this change in construction had produced an absolutely new and improved model—an un-



An old banjo clock showing the Constitution and Guerriere in battle

heard of thing in clock-making. The conservatism hitherto shown by the Colonial makers had stunted the growth of clock improvements in many ways, hence the sensation produced by Terry's new invention.

The change was such as to allow the play of weights on each side and the whole length of the case. The placing of the pendulum, crown wheel, and verge in front of the wheels, and between the dial and the movement, was another space-saving device, as also was the changing of the dial wheels from the outside to the inside of the movement plates. The escapement was transferred by hanging the verge on a steel pin, instead of on a long heavy shaft inside the plates. This allowed the clock to be fastened to the case in back, making the pendulum accessible by removing only the dial. Thus Terry fairly revolutionized small clock-making, by introducing a new form of clock, more compact, more serviceable, and cheaper than any of the older makes.

In 1807 Terry bought an old mill in Plymouth, and fitted it up so as to make his clocks by machinery. About this time several Waterbury men associated themselves to supply Terry with the materials if he would make the clocks.

What with this steady income from machine-made clocks, and the profits from extra sales, he made, in a very short time, what was considered quite a fortune.

In 1808 he started to build five hundred clocks at one time, an undertaking which was considered foolhardy. People argued that there weren't enough people in the Colonies who could buy so many clocks; but nevertheless the clocks sold rapidly. In 1810 Terry sold out to Seth Thomas and Silas Hoadley, two of his head workmen. The new company was a leader in Colonial clock-manufacturing for a number of years, until competition brought the prices of clocks down to five and ten dollars.

All these years Terry had been experimenting, and in 1814 he introduced his pillar scroll top case. This upset the clock trade to such an extent that the old-fashioned



A bureau full of clocks



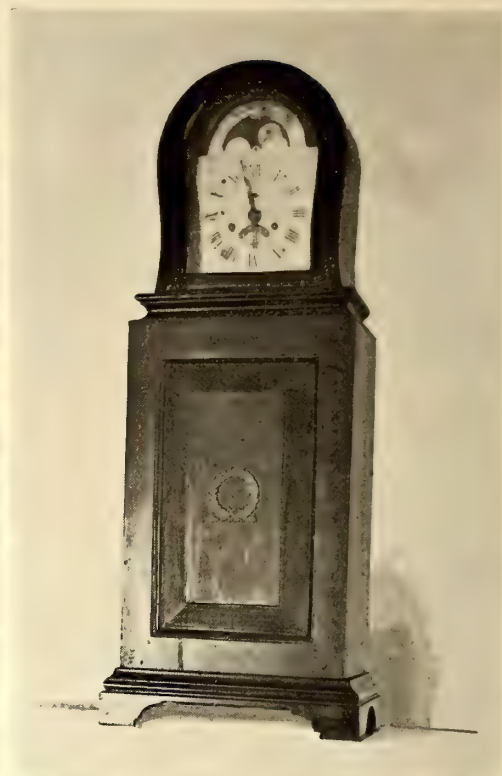
Old clocks and old china



A banjo clock



An old banjo clock

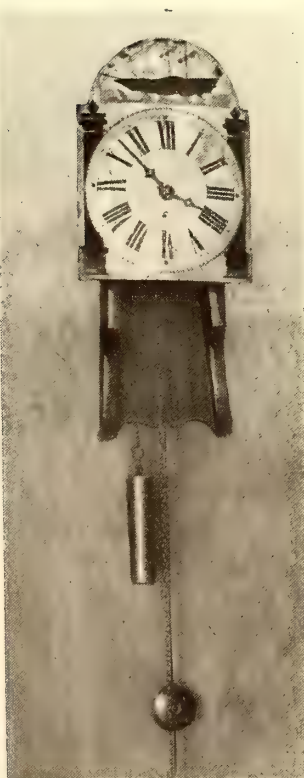


A Willard clock

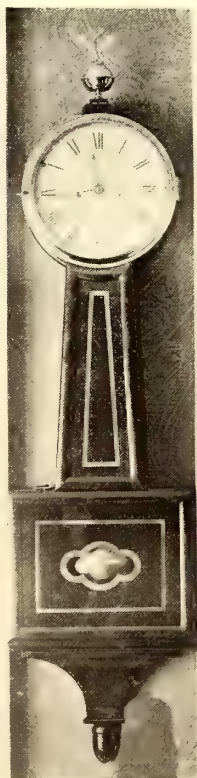
hang-up wooden clocks which hitherto had been the leading type, were forced out of existence. The shape of the scroll top case is rectangular, the case, with small feet and top, standing about twenty-five inches high. On the front edges of the case are pillars twenty-one inches long, three-quarters of an inch in diameter at the base, and three-eighths at the top, having, as a rule, square abaci and bases. The dial, which takes up a half or more of the whole front, is eleven inches square, while below is a tablet about seven by eleven inches. The dial is not over-ornamental, and has suitable spandrels in the corners. The scroll top is found plain as well as highly carved, but always the idea of the scroll is present.

Terry sold the right to manufacture the clock to Seth Thomas for a thousand dollars. At first they each made about six thousand clocks a year, but later increased the output to twelve thousand. The clocks were great favorites, and sold easily for fifteen dollars each.

Another conservatism of the Colonial clock-makers was the sharp division which they made between the use of wood and brass in the manufacture of the movements. The one-day clocks were made of wood throughout, and this prevented the use of them on water or even their exportation, because the works would swell in the dampness and render the clock useless. The eight-day clocks were made of brass, but the extra cost for movements sufficient to make the clock run eight days excluded many people who had to remain content with the one-day clock. It was not till 1837 that it occurred to any of these ingenious makers of timepieces to produce a one-day clock out of brass. To Chauncey Jerome, the first exporter of clocks to England, in the year 1824, the honor was reserved to apply the principle of the cheap wire pinion to the brass one-day clock. Thus began the revolutionization of American clock manufacturing, which has placed this country before all the world as a leader in cheap and accurate watch and clock-making.



One of a collection of fifty



A delightful type



The old grandfather's clock



Banjo clock



Banjo clock with ship picture

Some Western Homes

Costing From Three to Five Thousand Dollars

By Francis Durando Nichols



THIS is a difficult matter to secure a group of modern houses with attractive elevations combined with well-arranged floor plans, and costing from three to five thousand dollars, as illustrated herewith.

The first house presented in the series, and shown in Figs. 1, 2, 3 and 4, was built for Mr. Frank H. Tichenor, at Wilmette, Ill. The exterior of the house is constructed, from the grade to the peak, of wood covered with metal lath and coated with cement stucco of a gray color, while the trimmings are painted a dark ivy green. The roof is shingled and stained a moss green. The principal feature of the exterior is the entrance porch, built at one corner of the house, and the living porch, built at the side of the house and reached from both the living and dining-rooms by French windows. The hall and living-room are trimmed with oak finished in Flemish brown, and both are separated by columns and broad openings.

green and brown covers the wall space above the rack. The kitchen and its apartments are complete. The second floor is finished with a white painted trim, and contains three bedrooms and a bathroom, the latter wainscoted with tile and furnished with porcelain fixtures and exposed nickel-plated plumbing. The cellar contains the heating apparatus, fuel rooms and laundry.

The house illustrated in Figures 5, 6, 12 and 18 presents the interesting house built for William Schmedtgem in Greenleaf Avenue, Wilmette. The interesting feature is the cobblestone work built at the front part of the house. The cobblestones used in this house are white in color, and were brought by rail from Wisconsin at considerable expense. They add, however, a distinct feature to the exterior. The remainder of the first story of the house is built of frame construction covered with metal lath and then coated with a cement stucco. The exterior walls of the second story, and also the roof, are covered with shingles, finished in a natural grey color. The house is en-

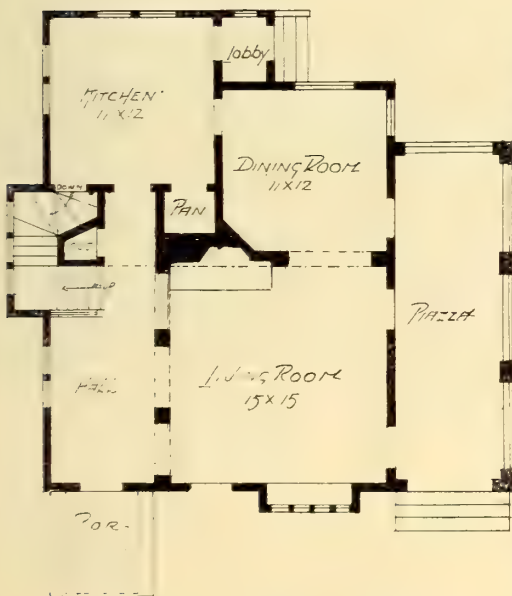


Fig. 1—The first floor plan



Fig. 2—The living-room

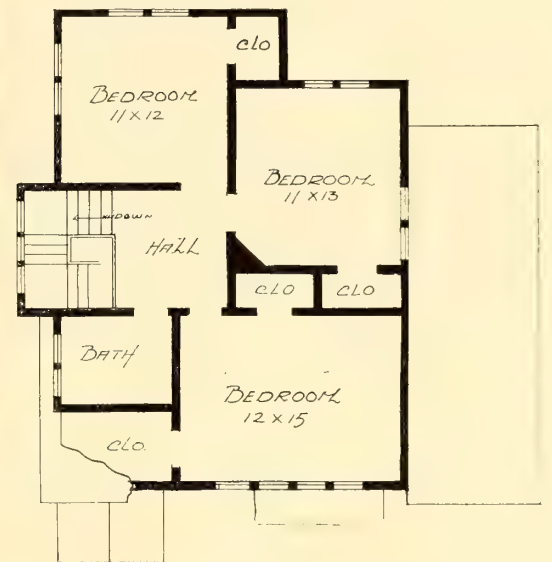


Fig. 3—The second floor plan

The hall contains an ornamental staircase, with turned balusters and rail. The fireplace in the living-room is built of red brick laid in white mortar, the facing reaching to the height of five feet, at which point a mantelshelf is placed. The dining room is also trimmed with oak, and has a plate rack extending around the room, below which the wall is covered with green paper, while a frieze of

tered through a vestibule into a hall, which has a groined ceiling and arches opening on either side to a living-room and a dining-room. The interior of the house is trimmed with oak throughout. The hall is finished in a dull brown; the living room has a yellow-brown finished woodwork, and a soft brown wall covering. The ceiling is beamed and the space formed by these beams are tinted a soft yellow. The inglenook con-



Fig. 4—Mr. Frank Tichenor's house is built of stucco



Fig. 5—Cobblestones are the feature of the exterior of William Schmedtgem's house

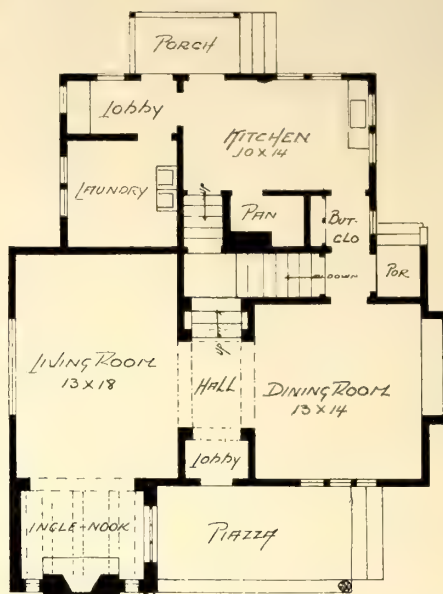


Fig. 6—The first floor plan of William Schmedtgem's house

A
Group
of
Modern
Western
Homes



Fig. 7—The dining-room of Mr. R. S. Baker's house is furnished with Mission furniture



Fig. 8—The cobblestone chimney is the architectural feature of Mr. R. S. Baker's house



Fig. 9—The hall of Mr. R. S. Baker's house, showing the inglenook

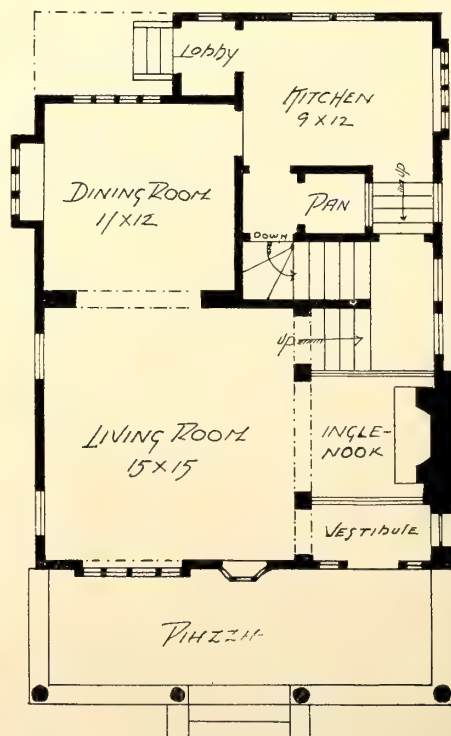


Fig. 10—The first floor plan of Mr. R. S. Baker's house

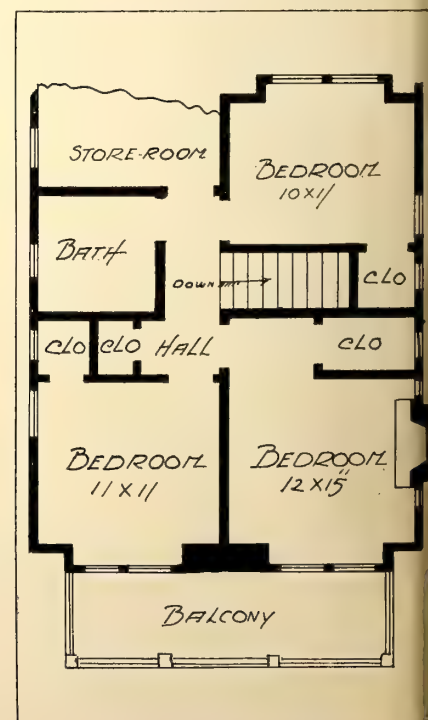


Fig. 11—The second floor plan of Mr. R. S. Baker's house

Costing
from
Three
to
Five
Thousand
Dollars

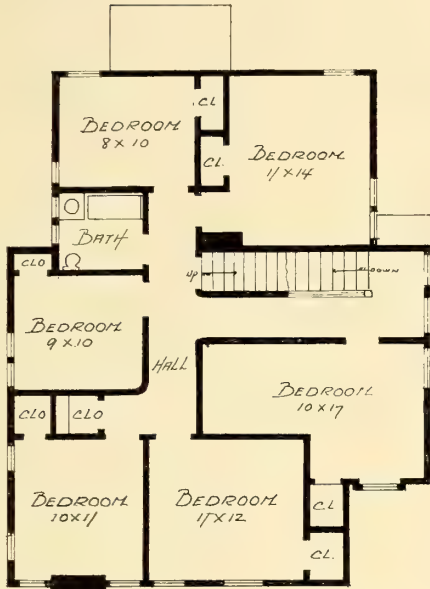


Fig. 12—The second floor plan of William Schmedtgem's house



Fig. 13—Mr. F. H. Madden's house is built of stucco



Fig. 14—Mr. R. S. Baker's house is built of cobblestone stucco and shingles



Fig. 15—The living-porch of Mr. R. S. Baker's house

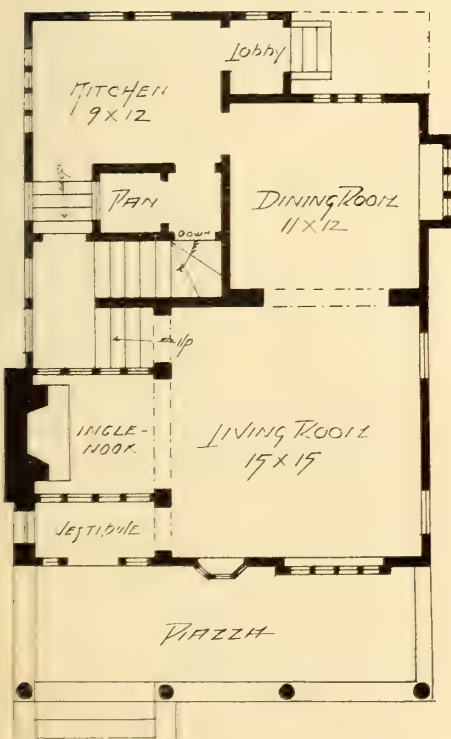


Fig. 16—The first floor plan of Mr. F. H. Madden's house

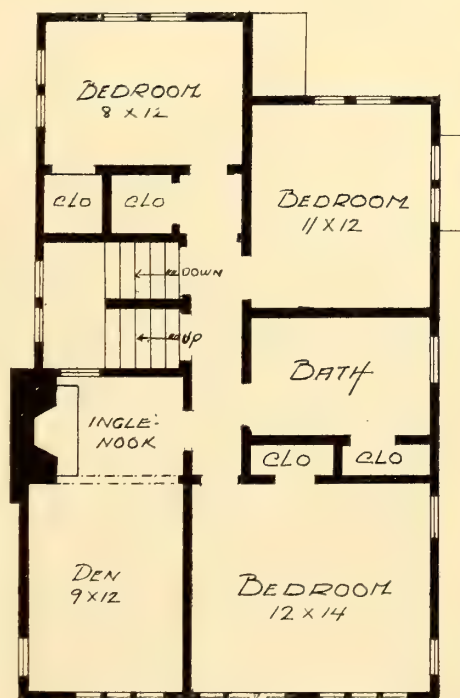


Fig. 17—The second floor plan of Mr. F. H. Madden's house



Fig. 18—The hall of Mr. William Schmedtgem's house

tains an open fireplace, built of red brick and laid in white mortar. The dining-room has a wainscoting built of battens extending up to the height of seven feet, at which point a plate rack extends around the room. The wall space between these battens is covered with a dark blue burlap. A soft yellow frieze finishes the wall space, above the plate rack. The ceiling is beamed. The butler's closet, kitchen, laundry and lobby are trimmed with yellow pine, finished natural. The kitchen is well equipped with all the necessary appointments; the laundry is furnished with porcelain tubs and the lobby is large enough to admit an ice-box.

The second floor contains six bedrooms and a bathroom. The trim of this floor is painted white. The bathroom has walls painted yellow, and is furnished with porcelain fixtures and exposed nickel-plated plumbing. The heating apparatus and fuel rooms are placed in the cellar, which is a cemented one, extending under the entire house. The cost of this house was five thousand dollars.

The third house in the series, Figures 7, 8, 9, 10, 11, 14 and 15, was also built at Wilmette, for Mr. R. S. Baker. This house has also considerable cobblestone work of similar character to the one illustrated in Fig. 5. The cobblestone chimney at the side is quite the architectural feature of the exterior. The first story of the house is built of cement stucco, while the second story is covered with shingles stained a silver gray color. The roof is also covered with shingles and stained a moss brown color. A broad living porch extends across the front of the house, and is provided with screens and furnished in an attractive manner. The entrance to the house is reached through a vestibule built at one corner of the building. The living-room and dining-room are trimmed with oak, stained and finished in a soft brown. The walls of the living-room are of rough plaster tinted in a soft green tone. The inglenook has a brick fireplace, with facings extending to the ceiling. The ceiling is beamed. The dining-room has gray walls from the floor to the plate rack, and also above the plate rack. The ceiling is beamed, and the spaces between these beams are tinted a lighter shade of gray. The kitchen and its dependencies are furnished complete with every modern appointment. The kitchen walls are painted a delft blue. The second floor contains three bedrooms, a large trunk room and a bathroom. The owner's room is finished in mahogany, and its walls are covered with a soft blue wallpaper, with rugs of corresponding color covering the floor. This room also has an open fireplace built of red brick, laid in white mortar, and furnished with a mantel. One of

the guest rooms is finished in old rose, with old rose hangings and white furniture, while the other guest room is finished in yellow and white. The cellar contains the heating apparatus, fuel room, cold storage and laundry. The cost of this house was forty-two hundred dollars.

Mr. F. H. Madden's house, shown in Figures 13, 16 and 17, was also built at Wilmette. The plans of this house are similar to the one built for Mr. Baker and illustrated herewith. The exterior of the house throughout is covered with cement stucco. The roof is shingled and stained a soft green, blending well with the green of the trees which overhang it. The principal rooms of the first floor are trimmed with oak. The inglenook, opening from the living-room, is furnished with a big fireplace. The dining-room, opening from the living-room through an archway, has a paneled wainscoting extending to the height of five feet, and is finished with a plate rack. The kitchen is furnished complete with every modern appointment. The lobby is large enough to admit an ice-box. The second story contains three bedrooms, a den and a bathroom. The woodwork of these rooms is treated with white paint. The den has an inglenook and an open fireplace. The bathroom is furnished with porcelain fixtures and exposed nickel-plated plumbing. The cellar under the entire house contains the heating apparatus, fuel rooms and laundry. This house cost five thousand dollars.

The last house in this series, Figures 19, 20 and 21, was built for Mr. Charles J. Cross. It is a practical house, and is entered from a porch placed at the center of the building. The hall is reached through a lobby, and at the opposite end of the entrance is built the stairway, leading to a landing from which the stairs to the second floor ascend. Broad openings are built in between the hall and the living-room and also the dining-room. The main part of the first floor is trimmed with oak, finished in a soft brown. The living-room has two bay windows and an inglenook furnished with an open fireplace and a mantel. This living-room and also the dining-room have beamed ceilings. The butler's closet is fitted up complete. The kitchen and laundry are trimmed with yellow pine, and are furnished with all the best modern fixtures. The second floor contains five bedrooms, bathroom and a small den. The bathroom is furnished with porcelain fixtures and exposed nickel-plated plumbing. The cost of this house is five thousand dollars.

Mr. Thomas R. Martin, of Highfields, Pittstown, New Jersey, was the architect of this interesting group of houses.

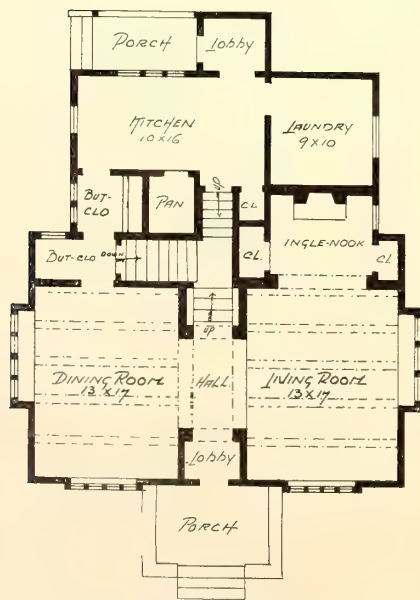


Fig. 19—The first floor plan of Mr. C. J. Cross's house



Fig. 20—The house of Mr. C. J. Cross



Fig. 21—The second floor plan of Mr. C. J. Cross's house

The World's Largest Swannery

By Harold J. Shepstone



WHAT is declared to be the oldest and largest swannery in the world is that belonging to Lord Ilchester, and situated at Abbotsbury, a little village in Dorsetshire, about nine miles from the City of Weymouth, England. It is said to be over 800 years old, and there is documentary evidence of

its existence at the time of the Tudors. Here may be seen at any one time over one thousand graceful white swans.

The village is situated near the extremity of Chesil Beach, a gigantic ridge of huge pebbles which runs ten miles parallel to the shore, and terminates at the Isle of Portland. Between the beach and the mainland is a long stretch of brackish water, known as the Fleet, which is the home of the swans. The Fleet is not easily accessible, either by land or by sea. It lies far removed from the busy haunts of men, and the Chesil Beach, like a mighty wall, protects it from the storms which sweep across the English Channel. When the waves roll in like thunder and break in clouds of spray against this wall of pebbles, the waters of the Fleet lie calm

and placid within, and form an ideal home for the swans, and an undisturbed resting-place for the many species of rare wild fowl that visit it in the late autumn.

The swannery proper occupies a stretch of low, marshy ground. In winter it is a well-nigh inaccessible swamp, and throughout the summer it is a dense jungle of reeds and osiers, and other semi-aquatic plants. These form an admirable cover for certain decoy ponds and duck tubes which are in use during the flight season later in the year. The keepers have also trained a number of the swans to assist them in this work. The wild birds without suspicion follow the tame swans into a long, netted passage which grows gradually narrower, and has no outlet; thus the birds are

imprisoned. As many as 500 wild swans, birds and ducks have been caught here in two days.

By far the most interesting time of the year to visit the swannery is during the months of March and April, when the birds assemble from all parts of the Fleet to the marshy but now comparatively hard dry ground, for the purpose of breeding. Imagine a somewhat bare field, crossed at frequent intervals by



On guard

ditches and streams, and covered all over with haycocks about six feet apart, each haycock having one or two swans sitting upon it, and you have a very fair idea of the Abbotsbury Swannery in the height of the nest season. Last spring there were over 400 nests placed closely together, and the entire swannery contained 1,150 birds.

The particular variety of swan seen here is that known as the mute swan. In all, we have no less than seven species of swans living on the earth today, and which may be roughly divided into three distinct groups: First, the black swan of Australia; second, the black-necked swan of southern South America; and third, the remaining five species of pure white birds—the whooping, Bewick, whistling, trumpeter and mute swans—found in the temperate regions of both hemispheres. Each differ from the other in certain little characteristics, principally in the formation of the bill, head and arch and color of the neck. The mute is easily distinguished by the large black knob at the base of the bill. It is one of the prettiest and most graceful of all the swans, and full-grown attains an extreme length of five feet. The name “mute” was bestowed upon it because of its inability to give utterance to tones as loud or as musical as those which characterize its congeners. The bird is, however, far from being actually mute, and has a soft, not unmusical note.

The nests at the swannery under notice consists of heaps of straw and dry spear reeds, the material being chiefly supplied by the keepers. The straw and roots are thrown down in heaps towards the middle of March, when the birds begin to assemble. It is necessary to do this, because otherwise the rather limited supply of material growing naturally within the area of the swannery would not suffice, and continual fights would take place among the nesting birds. The process of nest-making is not an elaborate one. First the male bird vigorously

treads down one of the heaps, until a firm foundation has been secured. Then the birds, who pair for life, gather softer material together, and line the nest, in which the hens begin to lay. The number of eggs may vary from three to nine, but six is the usual number. They are of a pale greenish color, and about five inches long. The swan, however, never considers that its nest is so complete as to

be incapable of improvement. Throughout the whole six weeks during which the eggs are incubated, the birds gather up any odd material that may come within reach and add it to their nest.

Both birds take their turn in sitting, and during a whole morning which the writer spent at the swannery, only one nest was detected containing eggs with a bird upon it. In the majority of cases the hen was sitting, and the cock bird sat on the side of the nest, mounting guard over

his mate. During the night most of the male birds are

on the waters of the Fleet, feeding upon the eel-grass which, later in the year, grows so luxuriously as to make boat passage almost impossible. This, by the way, constitutes practically the sole food of the birds; for, though the keepers occasionally scatter a little maize about, it is found quite unnecessary to feed the birds. Early in the morning the male birds return to the shore, and take their place on the nests, while the hens go to feed. Towards 9 o'clock the hens return, and throughout the morning both birds may usually be seen on the nest.

During the breeding season the cock birds are extremely pugnacious, and will attack anything approaching the vicinity of the nest. This results in some exciting scenes frequently being witnessed. The majority of the nests are very close together, and in passing between these to and from the water the birds are ruthlessly attacked by the cocks. Curiously enough, the birds never interfere with



On the breeding grounds



Swan and nest



Swan eggs and nest



The only safe way to carry a swan



Swan defending its nest against a keeper

one another's nest, but the moment any bird ventures to pass a nest it is at once pounced upon by the cocks. Some of the birds solve the difficulty by using their wings and flying from the nests to the water. Although they are not fed, the swans at Abbotsbury are very tame. One can walk among the nests, and though it may result in the cocks violently hissing at the intruder, little alarm is exhibited. The fact is the swan is not by any means so formidable an antagonist as people often suppose. Though he will bite, his bill is too soft to inflict a wound. His principal weapon is his wing, with which he strikes out vigorously at any fancied foe. Wonderful tales have been told of injuries inflicted by such blows, and, indeed, a former keeper of the Abbotsbury swans had some ribs broken on one occasion by an infuriated male bird. Provided you know how, it is an easy business to master a swan. Novices usually seize the bird by the neck, but this is a great mistake, as it leaves the bird's wings at liberty to inflict a blow. The right method of mastering a swan is to seize it by the wing and pull the bird towards

you. Under such conditions it is quite helpless, and can be led about without difficulty.

It might be supposed that the four hundred odd nests at the Abbotsbury Swannery, each containing on an average six eggs, of which four or five are hatched, would result in an enormous annual increase in the number of the birds. As a matter of fact, the keepers consider themselves fortunate if they succeed in rearing a hundred young birds each season. The little ones are killed by the bigger birds by the score. About the second day after leaving the shell the young cygnets make their way, under the guardianship of the parent birds, to the water's edge, but only a small proportion manage to make the journey. They are ruthlessly massacred on the way by the bigger birds, who actually lie in wait for them. Every season a number of swans are sold to owners of ornamental waters, the prices realized ranging from \$5 to \$20 per bird. The beautiful white plumage, fine proportions, and dignified bearing of the mute swan make it an ideal inhabitant for lakes and streams.

An American Forestry School

By Day Allen Willey



ONE of the Eastern States to which forestry is of really vital importance is Pennsylvania, for the reason that such a large revenue has been secured from its timber interests. Only ten million acres of its area has thus far been devoted to agriculture, the lumbering industry being very extensive over the balance of the State on account of the forest growth. In Pennsylvania, as well as other States, the lumber industry has been accompanied with great waste owing to the crude methods employed—the large quantity of valuable stumpage being left, young trees broken down in felling larger ones, while the practice of “skinning” the forests or cutting down the most valuable trees regardless of the destruction to the young growth has in itself caused a great loss.

Several large railroad companies obtain much of their timber from the State, especially the Pennsylvania Railroad Company, which has introduced a forestry system on its own lands that has resulted in much practical benefit. The most notable movement, however, is one which has been taken up by the State authorities in the creation of the only undergraduate forest school between Michigan and Maine.

The school has been planned on a very broad scale and is intended not only to educate those who attend it in every branch of forestry, but to conserve this most important resource so that the timber supply of the State will be permanent.

The institution itself is located in Center County, where an excellent opportunity is provided for a study of the various branches, but in addition the students are sent to various portions of the State as well as out of Pennsylvania for additional study and practice. The State College, as it is termed, gives special attention to field work in addition to the routine of the class room and lecture room. In connection with the earlier courses in forestry the men are taken into the field, where they study each kind of tree, its form, its bark, leaves, buds, and flowers, until they are perfectly familiar with the trees and the material with which they will work. Following this they carry on during the fall season the work of collecting the fruit and seeds of various trees and their storage, dry in bags or buried in moist sand. In the spring the seeds are taken and planted in forest nurseries, the students doing the actual work of planting and cultivation. Numerous trips are made in the vicinity of the college to study natural reproduction of the

forest. Near by is a State reserve of several thousand acres, and the State Forestry Reservation Commission has given the college an annual privilege of going upon this reserve for study and demonstration in forestry. There is no other forest school in the country that has so large a tract of wild land so near at hand and so available for study at all times. Last year one of the advanced classes made a topographical sketch of a large gap in the hills which supplied the college with water, and followed this with a forest map, showing the nature and amount of timber growth, and from notes taken in the field worked out a plan for the future management of the watershed. At the State College the course of training includes not only preparation for forestry in the East, but forestry in the West. As an illustration, the students are even instructed in the use of pack animals, which are so much depended upon in the great national forests, where the only route may be a pony trail. The course of instruction includes the care and use of ponies and mules, the methods of loading them, also riding. Pack trains are fitted out, and the students make expeditions as they would in the Rocky Mountain region or on the Pacific Coast. Two weeks at the end of the junior year are spent in camping upon some large wood lot in the State, where the boys get very practical training in camp life; in the estimating of timber and its actual measurement by various methods; rapid sketching and mapping of forest areas and in study of tree growth by analysis of tree trunks. From the data obtained in the field a map is made and a plan drawn up for the correct management of the wood lot. There are many locations in Pennsylvania which are admirable for field work because within a small area may be a large number of varieties of trees forming a miscellaneous growth. An opportunity is also given the students to investigate the different varieties of soil, the extent of the watershed, and to obtain other data which will be of



Forestry students studying structure of commercial timber and methods of identification



Students learning packing of animals for mountain transportation under chief packmaster, U. S. Army



Operations on sample trees in wood-lot to determine average rate of growth for every decade

great value in connection with their future vocation.

During the last year the members of the graduating class are put through a very rigid test, being required to spend at least four weeks in some forest region either in Pennsylvania or other States.

They are sent to a lumber camp where they make a study of lumbering as associated with forestry. This month in the lumber woods is taken as a part of a course in lumbering in which they investigate.

They are also placed during the summer vacations where they will get the most practical experience in forestry.

To get the men in touch with practical forestry as it is being carried on by private individuals throughout the State, and in its various forest nurseries, as well as the work of manufactur-

ing companies who put out tools and equipment used by the forester, one or more trips are made each year by the juniors and seniors, and it is planned to increase in so far as possible the usefulness of these trips. The students have visited various plantings of locust made by the Pennsylvania Railroad along its lines between Harrisburg and Philadelphia. In these plantations they studied the injury done by the locust borer and by mice, and have learned that the locust was not a tree of value for general planting throughout the State. At Pottsville, the forestry work carried on over the Stephen Girard estate has been carefully studied. On this estate extensive planting has been done, but without the best results, because of injury from fire. Stone walls have been built and fire lanes or roads established, which are as good an example of this method of preventing fire as can be found in the country. The advanced students have made trips through the southeastern portion of the State

visiting the large forest nursery of the Pennsylvania Railroad at Morrisville, which has been established by the Pennsylvania Railroad. This is reported to be the finest forest nursery in the United States. It had a million and a half of red oak seedlings grown from acorns which were set out in the spring of 1909. Industries associated

with forestry, such as works showing the way in which wire rope and cable are used in logging operations, have been visited and where the students were able to see the making of all classes of saws from the crude material to the finished product. This brief outline gives an idea of the broad and comprehensive scope of the instruction as carried out at this institution, but the opportunities for the graduates are such that the school authorities consider the work well worth while. There is such a constantly increasing demand for the trained foresters that it is much greater than the number who now graduate, while the salaries offered make it an inducement to a young man to take it up. The college continually has requests from large lumber companies throughout the country for graduates and

sometimes undergraduates. The United States Forest Service is also another source of employment, and this institution has already sent quite a large number into the national forests in Montana and other States. In fact, the demand for graduates is assuming such proportions that expert forestry will undoubtedly become a vocation which will give many thousands employment, and the results at the Pennsylvania institution prove that similar schools established in other parts of the country will be of far-reaching benefit in solving the problem of conserving the national woodlands.

At the head of the State College is Dr. Hugh P. Baker, a graduate of the Yale Forest School,



Work with transverse plane table in rapid measurement and sketching of forest types and areas

connection with the work of the agricultural and mechanical departments of the State University, as it is believed this is the best method. As forestry is a production of a crop from the soil, in a sense it is agriculture, and because the utilization of the crop demands considerable knowledge of engineering, the instructors are able to give the students work in the departments of civil, mechanical, and mining engineering—just the kind of employment that they need. Consequently the work is closely connected with the vocation of the farmer, and the one who completes the course of study with the view of becoming an agriculturist is in a position to get the most and best of his woodland and to make it a permanent resource.

It may be added that the length of this course is four

years, the first two years of which are devoted largely to foundation principles, which are absolutely necessary to the proper training of the forester. Beginning with the third year they take the men and give them two solid years of training along forestry and closely related lines. In connection with the actual forestry work the students take such subjects as fish and game preservation, diseases of trees, roads and trails, elementary irrigation engineering, elements of mining, in which they are taught in an elementary way the mining of various minerals, the timbering of mines and the laying out of mining claims. The students are also given a practical course in timber testing in their mechanical engineering department



A class in silviculture gathering seed of maples in a large sheet



Small plants used for teaching principles of treatment of timber with creosote



The house is built of red brick laid in Flemish bond with white mortar joints

The Residence of Robert Holt, Esq., at Summit, New Jersey

By Paul Thurston

THE home of Robert Holt, Esq., at Summit, New Jersey, is an agreeable combination of stone and brick, designed in the Colonial style with carefully studied detail. The front entrance-way, covered with a Colonial porch, and the whole surmounted by a pediment supported on Ionic pilasters, forms the principal feature of the exterior. The swell bay-windows on either side of the entrance are also notable.

The underpinning is built of rock-faced stone laid up at random; the terrace wall is constructed of a similar stone. The exterior walls of the building are built of wash-brick, with black headers laid in white mortar. The quoins at the corners are of puff brick. The trimmings are of white pine, painted white. The roof is covered with shingles, and is left to weather finish naturally.

The entrance is into a broad, central hall, which extends through the entire depth of the house. It is trimmed with white pine, and is treated with white enamel paint. It has a low Colonial wainscoting, and a massive wooden cornice. The archway, which separates the stairs from the hall proper, is very graceful in form. The staircase is of handsome design with ornamental balusters and a newel post formed of a cluster of the same, from which sweeps the mahogany hand rail.

To the left of the entrance is the parlor, which is treated in white, and contains a brick fireplace with the facings and a hearth of brick and a Colonial mantel.

The library is a handsome room, and is trimmed with oak. It has a book-case built in, and also in the circular form of the two corners of the room. The fireplace is re-

cessed into a niche, with brick facings and hearth, and a mantel with a pilaster effect. The remainder of the wide walls not covered with book-cases is wainscoted in panels. The ceiling has massive beams forming squares and deep panels.

To the right of the entrance is the dining-room, which is treated in the Colonial style, with paneled wainscoting, ceiling beams, and an open fireplace and mantel. The butler's pantry is unusual in dimensions, and contains a butler's sink, a broad counter shelf, drawers, dressers, etc. The kitchen is fitted with a range and hearth, ice-box room, store pantry, and a large servants' hall, which has now come to be the popular adjunct to the best well-regulated houses. These apartments are fitted with all the best modern conveniences.

The rear hall contains the stairs to the cellar and to the second story, and also has an elevator rising from the cellar to the third floor.

The second story is trimmed with old Colonial trim in white pine, and is treated with white enamel paint. This floor contains five bedrooms and two bathrooms; the latter is treated with white enamel, and contains porcelain fixtures and exposed nickel-plated plumbing. This floor also contains three servants' bedrooms and a servants' bathroom.

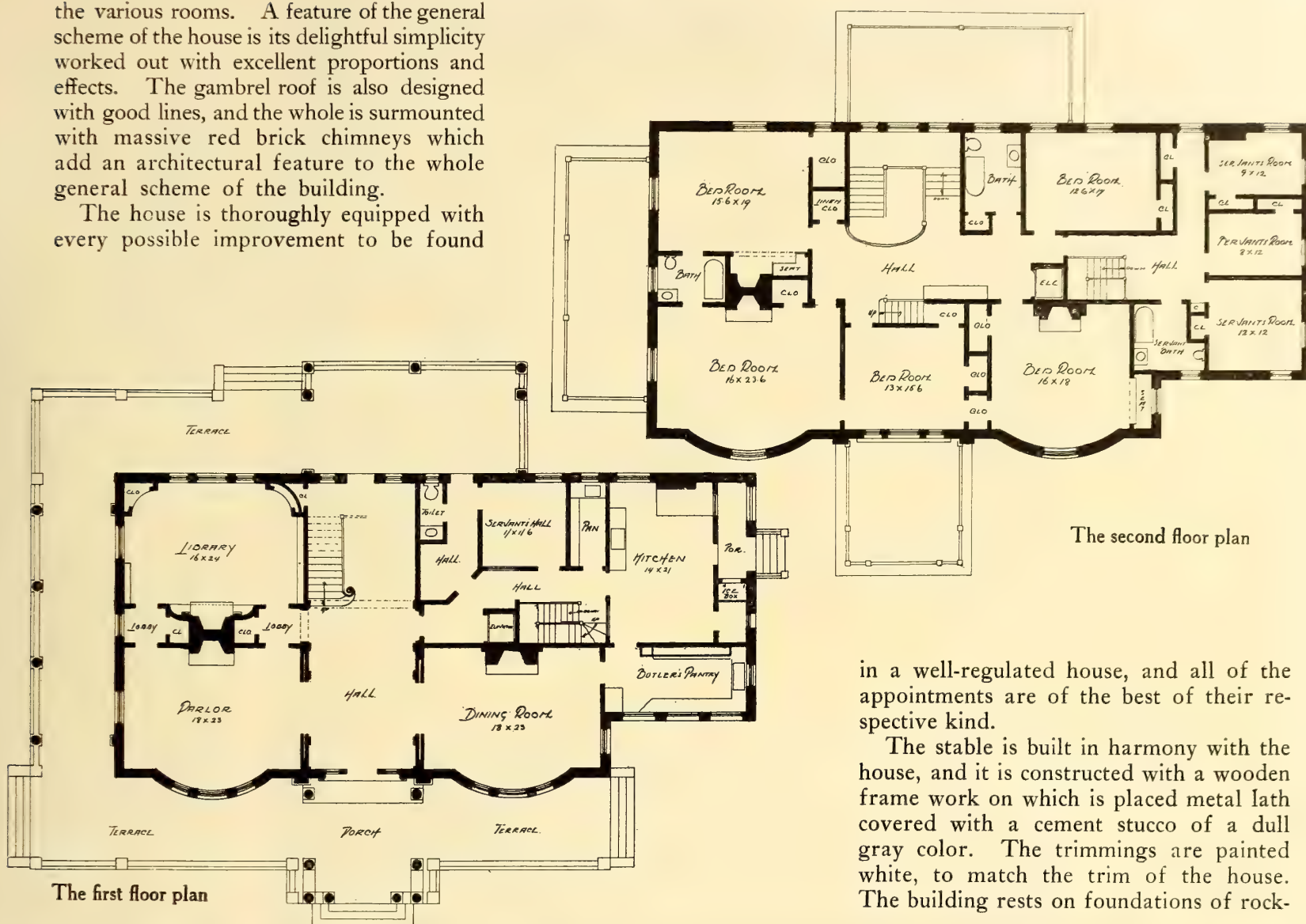
On the third floor are four bedrooms and a bathroom.

A cemented cellar contains the heating apparatus, laundry, fuel rooms, cold storage rooms, etc.

Messrs. Rossiter and Wright, who were the architects of this delightful house, have demonstrated their ability by designing a house which from every point of view is ideal in its exterior design and in its interior arrangement of

the various rooms. A feature of the general scheme of the house is its delightful simplicity worked out with excellent proportions and effects. The gambrel roof is also designed with good lines, and the whole is surmounted with massive red brick chimneys which add an architectural feature to the whole general scheme of the building.

The house is thoroughly equipped with every possible improvement to be found



in a well-regulated house, and all of the appointments are of the best of their respective kind.

The stable is built in harmony with the house, and it is constructed with a wooden frame work on which is placed metal lath covered with a cement stucco of a dull gray color. The trimmings are painted white, to match the trim of the house. The building rests on foundations of rock-



A terrace passing along the front connects the two porches and permits the light to enter the interior rooms

faced stone laid in cement mortar. The roof is covered with shingles, which are left to finish in their natural silvery-gray color. This stable is built on the side of the hill which slopes down from the point on which the main house is built, and thereby forms an extra story to the building, which is devoted to the coachman's quarters, consisting of a living-room, two bedrooms and bathroom. The remainder of this floor contains the hay loft, feed-room storage-room, etc.

The entire main floor is devoted to the carriage room and stable, both of which are ceiled up with narrow beaded North Carolina pine and then finished in a natural state with hard oil. The carriage-room contains sufficient room for a large number of carriages, and also a large well-fitted-up harness closet. The stable has box-stalls and single stalls, and is fitted with ornamental iron fixtures, etc.

The knoll upon which the house is built overlooks the valley below, beyond which are the Morristown hills.

A broad roadway sweeps in from each corner of the estate



The hall has a Colonial staircase with white-painted balusters and a mahogany rail



The stable is built of stucco

to the entrance, which is built at the front of the house and in the center of the building.

Masses of growing shrubs and plants have been set out at the entrance ways, and the entire property has been laid out and built after the plans of a landscape architect. This roadway extends along one side of the house to the stable, which is built at one side of the property.

A formal garden is built at the rear of the house and on an axis with the living porch at the west side of the building, from which a broad and extended vista is obtained of the garden. This garden is laid out in a geometrical form, with an attractive little pool in the center of it, from which the walks radiate. The various squares formed by these walks are planted with a variety of annuals and perennials, and in such a manner that there is a continual bloom of flowering plants and shrubs from early spring till late

in the autumn which are a continual delight to the eye.

The charm of the whole scheme is to show what can be done to assist nature in the beautifying of an estate.





Furnishing the Flat

By Lillian Hamilton French

II—THE DRAWING ROOM



THE difficulty of preserving the dignities of a flat in its furnishing has been touched upon in a preceding chapter. It is an art in itself. The success with which it has sometimes been accomplished is best proved by a study of what has been done in certain directions.

Take, for example, the drawing-room, Figs. 2 and 3, in which the chintz hangings are shown. The whole aim of the householder has been to maintain the air of a salon, or room set apart for the reception and entertainment of guests. No signs of household occupations, as distinguished from those of relaxation, are permitted to appear. There being no children in the family, this has been an easier matter than it would have been had the requirements of a troupe of romping boys and girls been considered. Yet even where children are found, the duty of the woman with any social connections should be to keep intact the purpose of the drawing-room, an obligation too often ignored!

To enter this particular room gives one a distinct pleasure. It conveys the same sense of coolness and refreshment as that inspired by a country house in summer, a sense especially delightful when one has to come in from either the dust or the snow of city streets. The scheme is simple. Anyone can follow it who is willing to sacrifice personal idiosyncrasies in order to fulfil given requirements. And just

here it may be well to insist upon a point around which the whole question of decoration revolves. One must learn to eliminate, ruthlessly discarding a color, perhaps beautiful in itself, but out of key, and to do the same thing with objects ancestral or otherwise, which have no place in given environments. If these special objects are of primary importance, prepare a place for them. But make up your mind before you begin to furnish, just what your house is to stand for, and keep that purpose always in view. If you mean to go on growing, knowing that as an

embryo collector, for instance, you must arrange a setting for future acquisitions, design your rooms for these, but don't confound purposes. Here is the secret of all successful interiors.

The woodwork of this drawing-room is gray-white, the walls are covered with a gray-white French paper with a conventional but unobtrusive design. The white ground of the chintz is covered with flowers. The same material is hung at the windows, with a striped white lace against the panes. Outside, even in winter, boxes are filled with green. The deep red velvet of the filling cost \$2.00 a yard. Now this arrangement brings, as it should, all the strong color of the room to one level, as it were, for like nature itself, a room in its color scheme should be built up from be-



Fig. 1—The Colonial mantel shows a simple treatment

low. As the earth and tree trunks are darker than the foliage which carries the eye on to the light above, so the lower part of a room should be darker than its upper part.



Fig. 2—Anyone can follow out this simple treatment of a drawing-room

This is why the ceiling should be lighter than the floor, otherwise it seems like something settling down on your head, instead of a something that carries the eye agreeably away.

It will be noticed that the pictures on the wall are not ponderous, but preserve the general air of the room's airy quality. The mantelpiece, though crowded, is properly balanced with its uprights of candlesticks, and the crowding is done with tact, being obviously a collection of Dresden china, not a massing of conglomerate objects.

The drawing-room shown in Fig. 4 belongs to the same apartment house, and has therefore the same dimensions. The object of presenting the two is to illustrate a point too often ignored: that, given the same dimensions and outlook, no two interiors need be alike. To try and make them so is one of our most grievous mistakes as a people. The charm of a French room once extolled, everyone tries to copy it. So it has been with "cosy corners" and "fish net hangings" and no end of other things. Too close imitations of what another person has done only produces the conventional, as when one buys so-called suits of furniture and thinks the work of furnishing accomplished. The rights of individuality should be exercised, even when suggestions are taken from others.

The chintz on this furniture is used only as a summer covering, and costs 28 cents a yard. It shows red and gray-white chrysanthemums on a white ground, the gray-white predominating. The design was chosen not only because the green of the leaves suggested coolness in summer, but because the wall coverings and hangings are green. There is a green burlap on the wall, making a good background for pictures and books. The window curtains, of green denim, cost 16 cents a yard, and are washed year after year. The thin curtains, of white muslin with a wreath of green vines, cost 11½ cents a yard.

Though this drawing-room has a greater number of objects brought into it, the same laws of elimination have been observed. Thus no color is permitted which would destroy the scheme of green and white, lightened by the brass of andirons and hanging lamps. The red of the chrysanthemums is subordinated to the green, and becomes only a cheery note. The white ground of the chintz is repeated in the white ground of the curtain, the green vines of which are the green of the rubber tree. These relationships should never be ignored.

The large, winged chair can be had for \$14.50 to \$35 in the linen. The purchaser is advised to study his own comfort in making a selection. William Morris has been quoted as saying that every chair should be built according to each man's separate anatomy. That not being possible, the value of soft chair-cushions, for elbows and backs, cannot be too strongly insisted upon. No two people sit in the same way, and when a hostess offers an easy-chair she should also provide that which would make it adaptable to people

of various sizes and proportion. These winged chairs come also in willow, costing \$8.00, and can be stained any color for \$2.00 extra. When cushioned, they are charming. The cane sofa costs from \$40 to \$50.

The plaster casts here shown are very cheap, costing from 50 cents to a dollar. In this instance they are toned to a soft dull yellow, so as not to make them too obtrusive against the green of the walls. Over the top of the mirror, however, the plaster cast has been left for Time's staining, as no background had to be considered. The staining process is done in this way: A little beeswax is soaked in turpentine until it becomes soft enough to apply with a camel's hair brush. Then a small portion of burnt umber is mixed into it. The polishing is done with an old silk handkerchief, until the cast looks like dull ivory. When



Fig. 3—A large-flowered chintz is used for the furniture coverings and at the windows



Fig. 4—A room identical with that shown in Fig. 3, but differently treated and furnished

Fig. 5—All the wall space in the study is well used

the cast is from a good model, the labor expended is worth while.

Among fire-lovers, Franklin stoves like the one shown in this drawing-room have been cherished through every change of fashion. They are now eagerly sought for, as they throw out a greater heat than the grate. Their brass trimmings, too, take up, in an indescribable way, the play of the flames, and add infinite charm to the fireplace. The size of this drawing-room has made it necessary to push the Franklin back into the chimney opening, but drawn into the room, with a brass kettle on top, the Franklin becomes even more delightful. In country places these can be picked up for six and eight dollars. In New York they sell for twenty-five. It is quite possible to arrange them in a room provided with no mantelpiece, or even in one with gas logs, the logs being removed and the opening utilized for the pipes.

For the same reason that the two above-mentioned drawing-rooms have been shown, two other corners in the same apartment house are here given. One shows the door opening into a small study (Fig. 6); the other shows the corresponding door as closed (Fig. 7), and covered with book-shelves. A divan is drawn close to the shelves, bringing the books within ready reach of the hand. Such proximity to one's books is always delightful, and much to be recommended. A rug is used as covering.

In the second illustration the door is left open and protected by a curtain, which, when not in use, is looped back on one of those old-fashioned brass discs now so much sought after. They are to be found in antique shops, and sometimes in garrets. This one cost a dollar and a half. As it repeats the brass tones everywhere visible in the two rooms, it is much more effective than the ordinary hook and curtain band. Just inside the door a mirror hangs over



Fig. 6—A door opened and protected with a curtain



Fig. 7—A similar door closed and covered with book shelves

low book-shelves. Its purpose is distinct. It gives a sense of size to the room, and repeats many agreeable objects, even when looked at from an angle. If one uses mirrors, nothing is more important than the study of their reflections. This one when framed cost \$7.

The small study (Fig. 5) where it hangs is only seven by eight feet, and illustrates what can be done in a limited space by an arrangement of furniture. The divan runs the entire length of the room, with the desk against the opposite wall, which is broken by the door. In front of the window is a table for odd books, and at least 200 volumes fill the shelves.

I must claim the credit of having given, many years ago, the first idea of a divan with springs, and provided with a box for dresses underneath. Before then, divans were made of upright wooden pieces finished with broad linen bands to hold a mattress. They were most uncomfort-

able. The boxspring of the bed gave me the idea for these, and if one cannot afford a divan with a box, one can always get a boxspring and nail small blocks of wood underneath not only to keep the dust away, but to bring the seat up to the required height. I find sixteen inches the most comfortable when seated. This divan cost \$18 uncovered. Separate padded ends and backs were ordered extra, for the sake of comfort. These come only to the level of the divan, which can then be pulled out from underneath. They are secured by strong upright iron strips about an inch wide, and twenty inches long, pierced with holes through which the strips are screwed to the baseboard. No other support is necessary. In ordering these padded sides and back, one must study the head level, so that in leaning back, one's neck is at ease.

I hope to take up the treatment of the dining-room in the next issue of AMERICAN HOMES AND GARDENS.

Hints for the Household

By George E. Walsh



AN OUTDOOR stove, either for home or camping use, can be quickly and conveniently made with an old barrel and a little cement or even with wet clay. Put the barrel on the ground and cover it with wet cement, except for one end, and a place through which a piece of stove-pipe is inserted. Give the cement two days in which to harden, and then fill the barrel with kindlings and start a fire. The barrel will burn up, and leave a stout shell of cement as a good stove for future use. Campers sometimes employ this method by burying the barrel in a clay bank, and using the clay for the stove. If the clay is of the right consistency, it will bake hard and make a perfect stove.

Not many may appreciate the fact that an excellent winter plant for pots is furnished whenever we purchase a pineapple at the grocery. Select a fruit with a good top, one with the prickly stalk leaves well developed and not rotten or broken. Cut this top off about one inch down in the fruit, and plant it in a pot of rich soil. If moisture and heat are then liberally supplied, the top will thrive and spread out a head of leaves like a big cactus plant. Such a plant, carefully cultivated, will within a few months present not only an odd but very handsome sight. It is particularly suitable for hanging baskets and rustic boxes, along with trailing vines and foliage plants.

A great many people press flowers and autumn leaves to keep, and others have adopted with success the trick of dipping them in white paraffine and then pressing them with a hot iron. The preservation of ferns in this way is even more satisfying. If large stalks of ferns are gathered fresh from the swamps and woods late in the season, and dipped in melted paraffine, they will keep indefinitely. They make excellent ornaments then for vases and mantel-pieces. They must be thoroughly dipped, however, stalk and fronds, for the secret of the process consists in excluding the air entirely. If properly treated, the paraffine will not show, and there is no suggestion of "waxed flowers."

One of the best uses to which pressed and paraffined autumn leaves can be put is to make ornamental picture or photograph frames of them. Make flat, square frames of pine wood, and glue the autumn leaves on the sides. Pretty effects are easily obtained with a variety of leaves.

To give a rustic effect to the whole frame, nail on the outside and inside unpeeled sticks from the woods. Almost any kind of straight green wood will answer the purpose, and even if a few knots and short branches are left, no harm will be done. When finished, the whole frame should be gone over with two coats of white shellac. This will exclude the air and tend to preserve the color of the green wood. The shellac must be applied on all sides of the frame, back, front and sides, or else the air will get inside and spoil the work.

A use for old newspapers not well known is to use them for filling cracks, crevices and openings in old floors or around the base of a room otherwise quite airtight. Take some newspapers and tear them up into small pieces, and boil them in water until reduced to a pulp. When thus softened, add a little white glue that has been previously melted. Stir thoroughly, and then permit the mixture to cool. While still soft and pliable, fill floor cracks and holes with the paper pulp, and as it dries and hardens, smooth off evenly. When the paper pulp has dried and hardened, it will take paint and stain well. A floor can thus be tightened up, and when painted and stained it will appear a hundred per cent. better. Where the wall base does not join evenly with the floor, fill in the cracks with the same material. This will make cold and draughty floors comfortable.

A waterproof canvas for covering articles placed outdoors is a fine thing to have around. Ordinary canvas coverings are far from being waterproof. When the rain has had time to soak in them, they will leak steadily. If such a canvas, old or new, light or heavy, is treated with paraffine and gasoline, it will be rendered absolutely waterproof. Melt paraffine in a kettle until near the boiling point. Then mix twice the quantity of gasoline with it, taking it away from the stove, of course, before adding the gasoline, and after a good stirring apply vigorously with a paint brush. When nearly dry, run over the canvas with a warm iron, so that the paraffine will soak into the fibers of the cloth. Such a treated canvas will not be sticky or oily, and only slightly stiffer and heavier than the untreated. It is so waterproof that it can be laid in water without absorbing any of it. Boat covers of ordinary canvas or sailcloth are treated in this way for general use in rainy weather.



CORRESPONDENCE



The Editor of *American Homes and Gardens* desires to extend an invitation to all its readers to send to the Correspondence Department inquiries on any matter pertaining to the decorating and furnishing of the home and to the developing of the home grounds.

All letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this Department.

Problems in Home Furnishing

By Alice M. Kellogg

Author of "Home Furnishing: Practical and Artistic."

FLOOR COVERINGS FOR A NEW HOUSE

FROM a reader in South Carolina, G. F. D., comes a question that is almost impossible to answer in any specific way, as only general conditions are mentioned in the letter: "What kind of floor coverings shall I use in my new home, which is now nearly ready for occupancy? There is the entire hall throughout, with stairs and landings. Then there is the entrance hall and living-room, the dining-room and den on the first floor. Upstairs there are four bedrooms on the second floor, with two bathrooms and two bedrooms on the third floor for servants. I understand that the Oriental rugs are the best, as they wear the longest. Would you advise these rugs all over the house?"

Oriental rugs are undoubtedly very serviceable as to wear, but there are other hand-tufted rugs made in Ireland and Scotland that deserve the same praise. The cost of an Oriental rug may put it entirely out of reach, as one should reckon from ten dollars a square yard upwards, according to the quality, design and coloring. As the entrance hall has usually the maximum wear, the Oriental rugs may be selected for this position, in such sizes as suit the spaces, leaving an even margin of the flooring around the edges. Oftentimes the hall is so irregular as to its floor lines that it is really better to use several small rugs, reversing this rule for the other parts of the house.

In the living-room, whatever amount may be expended for the floor covering should be put into one large rug if the greatest amount of comfort is desired. If necessary, a carpet may be made into a rug, with or without a border, choosing a pattern that makes up well in the proper shape.

For the dining-room there are a number of domestic rugs that can be had in Brussels, Wilton, Axminster and woollen mixtures. One of the recent achievements in a low-cost rug for the dining-room is a Chinese motive that suggests an interesting color scheme of yellows and blues in the wall hangings and curtains.

In carpeting the stairs, it should be remembered that a plain carpet of dark hue will need a careful attention with the broom to keep it in condition, while neutral colors or mixed shades prove less exacting for the housekeeper. Often the guide to the stair carpet is the covering on the wall, as it is in such close proximity.

In the bedrooms where single beds are used, a large rug is sometimes the best

choice, as a small bed can be easily moved on cleaning days. With a heavy double bed the spaces of the floor may be fitted with rugs, laid so that only a minimum amount of wood is left bare. The importance of wise selections in the floor coverings is urged on this correspondent, as they will be the most enduring of the furnishings in the new home. A safe rule is to make the rug the starting point for the color scheme, bringing the wall-papers and other accessories into harmony with it.

WHAT TO USE FOR A LOUNGE SPREAD

"In my sitting-room," writes a college girl, "I have a wide, comfortable divan (really a cot with a thick hair mattress), which I make up for an extra bed when my sister visits me. But usually this divan has a lounge cover in tan colors, like the tones of the wall. My difficulty is to find a warm spread to keep on the outside that will not look like a bedspread and yet that will be of use for an extra covering when the cot is made up for sleeping. Most of the girls here use the Italian blankets for this purpose, but the colors are too glaring for my room, and they are not warm enough. Have you a suggestion for my problem?"—F. D. S.

The best kind of a spread for the double need of this room is one of the Scotch traveling rugs in browns and olive greens. Those of pure wool are quite expensive, but their wearing qualities make them worth paying the seemingly large outlay. Then, too, they are lighter and warmer than those made of mixed materials. Such a rug can be used with a steamer chair out-of-doors or on a sleeping porch, for driving or motoring, or for travels abroad.

PICTURES FOR AN ENTRANCE HALL

Rather an unusual request comes this month from a subscriber in the West, who wishes to make the entrance hall in her home more attractive. "The hallway in our home is rather of the old-fashioned type, neither large enough for a reception room, nor small enough to be merely a passageway. The wall spaces are noticeably bare and plain. I have just had a new paper put on that is a success so far as a pleasant tone is concerned, but it has hardly any defined pattern. Could I improve the appearance of the walls by adding pictures? I do not care for the carbon copies of celebrated paintings, but I cannot think of anything else. I would prefer colors, but cannot afford either oil or water-color paintings."—A Philadelphian.

Some of the German colored prints, costing about thirty-five dollars, are wonderfully effective in idea and boldness of color

effect. If these cost too much, the colored prints by Jules Guerin are interesting. These cost five dollars each. One of the best is the artist's conception of Independence Hall, which might appeal to this reader. Another good one is the Library at Washington. There is also a series of French chateaux, and of these the most attractive are Luynes and Amboise.

WALL-PAPER TO IMITATE WOOD VENEER

"I have heard that there is a wall-paper made to look like old oak, and if I could find this it would help me to carry out an idea I have for my dining-room. I have some good old blue china that I have kept in a closet, as it is too old for use, and I have no place to show it. Many of the pieces are rather small in size, and my plan is to run a plate shelf around the room, in line with the top of the mantel shelf, which is five feet six inches from the floor. Instead of filling in the space below the shelf with burlap or fabric, I would like this paper that looks like oak. What do you think of this? And what is the cost per roll of the paper?"—R. T., New Jersey.

The oak veneer paper comes in dull tones of brown that look well as a wainscot. The price of an eight-yard roll of the usual eighteen-inch width is \$1.50. The tones of this paper are very different from the old-style grained oak, and the effect on the wall is refined. It is an excellent substitute for the real thing.

CHOCOLATE SET

"With my intimate friends I have found that afternoon chocolate was more popular than tea. The chocolate cups I find in the department stores, however, are so small that I have been using my tea cups. Now I want to buy a pretty chocolate pot and bowl for whipped cream. What shall I get?"—A Bride.

The chocolate cup now in use is the Empire shape, tall and straight, with the handle projecting above the rim. While this is of fairly good size, it is not as graceful as a tea cup, nor as practical. The tea cup that is used for afternoon tea could also be used for afternoon chocolate. A set of six or more could be selected among designs showing garden flowers, pinks, roses, daisies, corn flowers, roses and violets, to give a little sentiment to the set, and the chocolate pot may be of English china in ivory-white, with a gold handle and narrow edge of gold around the top. A silver porringer would be a quaint holder for the whipped cream, and an old Dutch spoon may be used for a ladle. Possibly the latter articles may have been among the wedding presents.

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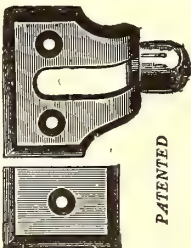
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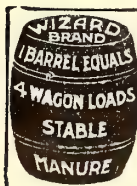
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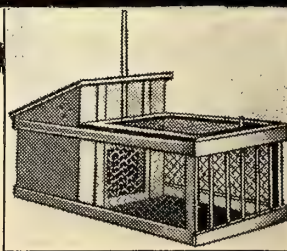
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TERRACE BANKS

A RETAINING wall of masonry is always the best way to support a terrace, but it is often too costly, and a sloping bank of earth must be used instead. The sloping bank takes up more room than a wall, because an earth bank should not be on a steeper slope than "two to one"; that is, rising one foot in a distance of two feet. The wall, of course, can be perpendicular.

It is a problem to plant a terrace bank. Grass, of course, is the obvious thing, but it is difficult to cut on such a steep slope, and its direct exposure to the sun and the lack of moisture makes it dry up more quickly than the rest of the lawn in a drought. If grass must be used, the soil should be carefully prepared. It is seldom that enough good soil is put on a terrace bank; it should be at least a foot thick, and eighteen inches would be better.

It is hard to seed a terrace bank, because the first rain will wash all the seed or the young seedlings to the bottom, and perhaps gully it so badly that the work has to be done over again.

Sometimes a steep bank can be seeded by mixing the seed with fresh cow manure and plastering it on the bank about an inch thick. This will harden and stay on the bank until the grass is started, but the grass will not grow well if the soil underneath is poor.

Sodding can be done, but is expensive, and the sods must be pegged to keep them from slipping. Good deep soil underneath is just as necessary, whether seeding or sodding.

There are other things which will grow better than grass on a steep bank exposed to the sun, and which are less care. The memorial rose (*Rosa wichuriana*) will grow well in such a place. It seems not to suffer from drought, it will grow in poor, sandy soil, and is beautiful when in flower. The foliage is always good, and its green stems are better to look at in winter than dried grass.

Moss pink (*Phlox subulata*) is another hardy plant which simulates grass more closely than the memorial rose, and is just as handsome when in bloom. It makes a dense carpet two or three inches thick.

Lemon thyme (*Thymus serpyllum* var. *citriodora*) is good in foliage, and very fragrant. It grows not over six inches high, and will soon cover a dry bank.

There are several plants with silvery or grayish leaves which will do well on a dry bank; among them are the Easter bell (*Stellaria holostea*) and *Stellaria graminea*.

Another way to treat a terrace bank is to slope it at an angle of forty-five degrees and then to pave the slope with stones. The stones should be of good size, put on edge or on end in the bank, and the joints filled with good top soil. Many small and rare plants can be grown with little trouble in the joints between the stones. The drainage will be good and the stones warm the soil and reduce the area where weeds can grow.

In some soils it would be possible to

make the bank even steeper than forty-five degrees, with a consequent saving of room. The plants can be put in as the sloping wall is being built, or seed can be sown in the joints afterwards.

STREET TREES

THE qualities which make a tree suitable for planting on streets are freedom from insect pests and diseases, hardiness, ease in transplanting when of good size, reasonably rapid growth, upright habit.

The American elm will always be a favorite street tree because of its large size and noble habit. The elm beetle is a serious objection, but can be kept in check by spraying.

The English elm is also a fine tree, more like an oak in habit, and more badly injured by the beetle than our elm. Both can be moved without loss when of large size, and they are easy to grow and therefore inexpensive.

The ginkgo is an excellent street tree, though little used. It is hardy, grows rapidly, and has no insect enemies or diseases. It attains a large size and becomes picturesque when old, though it is at first stiff and awkward.

The linden is an excellent street tree. It transplants readily, and grows to a large size. The small leaved linden (*Tilia ulmifolia*) is the best variety.

The maples, of course, must be used for many streets, and no tree is handsomer than the sugar maple. The Norway maple is better than the sugar maple on sandy soils and in exposed situations.

The sycamore maple (*Acer pseudo-platanus*) is much like the Norway maple, but does not thrive in poor, sandy soil. It is a hardy tree to use along the coast, however.

The scarlet maple is less often used than the sugar maple, but it makes a good street tree and is pleasant to have, for the sake of variety.

The oaks would be good street trees if they were not so hard to transplant, and for this reason the pin oak is probably the only one which will ever be largely used for street planting, since it is the easiest of all to transplant and can be got of good size.

The plane trees are both good street trees, though the Oriental plane is probably better than our native one, because it does not suffer from the fungus disease, which often attacks our native plane. It is perfectly hardy, and will thrive near the ocean.

The poplars are not very good street trees, and should never be used where other trees will do well. The Balm of Gilead, however, is said to be a good street tree.

The liquidambar is one of our finest trees, and very good for street use, but it is not reliably hardy north of New York City.

TWENTY-FIVE PLANTS FOR THE HARDY PERENNIAL GARDEN

THE beginner in gardening is likely to be confused by magazines and catalogues because they speak of so many plants that are desirable for one reason or another, in the garden. In seed or

plant catalogues, all plants are good, and it is hard to choose between them. Yet some are bound to be a disappointment, either in flower or habit or because they need special care.

The garden would probably be better if the variety were not so great. Certainly it would be easier to group the plants and easier to plant and care for them.

In the following list of twenty-five hardy perennials, I have included only those which are absolutely hardy, which are easy to establish and which need little care and fussing; and they are all indispensable in any garden.

A small garden will be much more effective when restricted to these twenty-five plants than it would if a hundred different ones were used.

1. *Achillea ptarmica*—"the pearl"—2 to 3 feet. Small white flowers all summer.
2. *Alyssum saxatile*—gold dust—1 foot. Yellow flowers. April-June.
3. *Anemone japonica*; 3 to 4 feet. Large white flowers. September to frost.
4. *Aquilegia*, Columbine; 2 to 3 feet. Many varieties, red, blue, yellow, white. May-June.
5. *Asclepias tuberosa*—butterfly weed—2 feet. Orange flowers. July-September.
6. *Aster Novae Angliae*; 2 to 3 feet. Purple or rose. September-October.
7. *Campanula*—bell flower—1 foot 6 inches to 2 feet. Blue or white. June-July.
8. *Chrysanthemum*; 2 to 3 feet. Many colors. October-November.
9. *Coreopsis*; 2 to 3 feet. Yellow. June-September.
10. *Delphinium*—larkspur—2 to 7 feet. White and blue. June-September.
11. *Dianthus*—pinks—6 to 12 inches. Many shades of red and white all summer.
12. *Dicentra*—bleeding heart—2 to 3 feet. May.
13. *Funkia*—day lily—3 feet. Yellow and orange. June-July.
14. *Gypsophila*—baby's breath—2 feet. White. July-August.
15. *Hemerocallis*—day lily—3 feet. Yellow and orange. June-July.
16. *Hollyhock*; 5 to 7 feet. Yellow, red, blackish. July-August.
17. *Iris*; 6 inches to 3 feet. Many varieties. May-July.
18. *Monarda didyma*; 2 feet. Crimson. June-September.
19. *Paeonies*; 2 to 3 feet. White and red. June.
20. *Papaver Orientale*—Oriental poppy—2 feet 6 inches. Scarlet. May.
21. *Phlox*; 2 feet 3 inches. Many colors. July to frost.
22. *Platycodon*—Chinese bell flower—1 to 2 feet. Blue and white. June-October.
23. *Tradescantia*, Spiderwort; 2 feet. Blue and white. June-September.
24. *Veronica*—speedwell—2 feet. Blue and white. May-June.
25. *Yucca*—Spanish bayonet—4 to 7 feet. White. June-July.

The Unseen Power

As man's mechanical skill increases he conceals the means by which work is done. Compare, for example, the earliest locomotives and their exposed mechanism with the modern "iron horse," or the early walking-beam engine with a modern motor-boat driven by a submerged propeller and seeming to move as if alive. In your country home there is no need to insult the landscape with a towering, clattering, unreliable windmill. Leave windmills to the days of "New Amsterdam," and the old flint-lock muskets to lovers of antiques, and let your water supply be furnished by the little, inconspicuous **Hot-Air Pump**, which can be tucked away in the corner of the cellar, barn, or outhouse, works silently and independently of wind or weather, and is reliable always. Once installed it is out of sight and out of mind.



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DESTRUCTION OF WOOD BORERS

IN OUR waters there are two genera of mollusks, viz., *Xylotrya* and *Teredo*, and three of crustaceans, viz., *Limnoria*, *Chelura*, and *Sphaeroma*, that attack and seriously damage structures of wood in salt water. The *Xylotrya* and *Teredo* are very similar in structure and action. The former are by far the more numerous, and what are commonly called *Teredo* are, in the large majority of cases, *Xylotrya*, and all references to the *Xylotrya* will be understood to refer to both genera.

When first coming to life the *Xylotrya* is very minute, being the thickness of a hair and about one-twentieth of an inch long. When very young it attacks the wood in countless thousands, and immediately begins to bore.

In structure it is comparatively simple. Its body consists mainly of a tube beginning at the posterior end of the body, running to the head, and then returning to the posterior end. At the head end is a sucker-like foot or tongue inclosed in two shell valves which are provided with fine, hard, tooth-like protuberances. It is with these valves that the boring is made. Through the longer end of the tube water is taken in, passed through the body, through the return tube, and is ejected through the shorter end with the wood borings and the excreta. It does not appear that the *Xylotrya* gathers any sustenance from the wood, its food consisting only of the infusoria in the water.

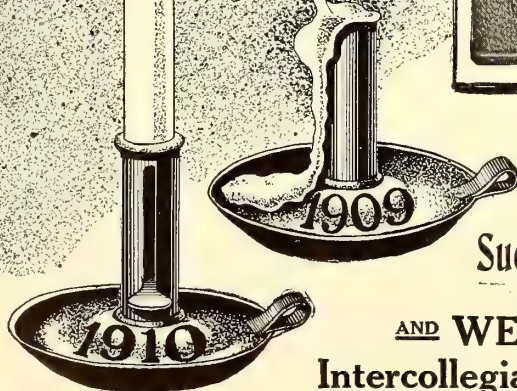
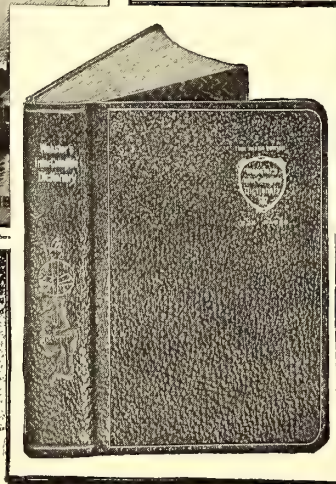
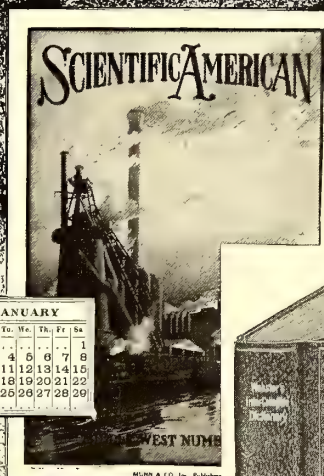
Of the crustacean borers the *Limnoria*, or "wood louse," is the only one of great importance. It is about the size of a grain of rice, and tunnels into the wood for both food and shelter. The little galleries excavated are about one-half inch long and extend inward radially, side by side, in countless numbers, so that the wood partitions between them, which are very thin, are soon destroyed by wave action, thus exposing a fresh wood surface to attack.

A new method of destroying these borers has been found. The piles to be treated are inclosed by a canvas apron supported by floats, and kept in an upright position in the water by weights at the lower end. The inclosed space is ordinarily not more than 40x80 feet square. The water in the inclosure underneath is decomposed by means of an electric current, and chlorine, with small quantities of bromine and iodine, are formed, rising through the water around the piles. By a mechanical contrivance the apron and electrical terminals can be lowered to the mud level and gradually raised, the gases being constantly generated in the inclosure. As previously seen, the *Xylotrya* draws in water through one end of the tube, always exposed, which passes through the entire body. It has been proven that a mixture of one part of chlorine to one-half million parts of water is sufficient to destroy life in marine animals, so a very small quantity passing through this breathing tube causes death. As the *Limnoria* obtains a part of its food from the water, the same result is obtained with this type of borer. It is true that one application of this method simply kills the borers existing in the pile and surrounding waters, and does not prevent further ravages from others, but the process is so cheap that it can be applied as often as necessary, say every two or three months, thus insuring long life to an unprotected pile.

A public demonstration of this method of destroying wood borers was recently made in the waters of Elliott Bay, the inventors using for the purpose of generating the

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chlorine gas a current of 100 amperes at about 12 volts.

After the treatment the pile was left in the bay for twenty-four hours, in order that should there be any power of revival it might manifest itself; then it was cut open, and all Xylotrya were found to be dead. The result was accomplished principally by the corrosive action of the chlorine upon the exposed parts of the Xylotrya, that is, the so-called "tail," which in reality constitutes both their feeding and breathing organs. It appeared that all exposed tails in the pile thus treated turned white, while when the animal is alive, they are a dark gray. As the chlorine penetrated the borer it coagulated the albumen which constitutes part of the body, and which shows itself in white spots. The original appearance of the Xylotrya when alive is almost transparent and glassy.

A TIMBER FAMINE PREDICTED IN TWENTY YEARS

GIFFORD PINCHOT, the ex-government forester, made the declaration, on the return from a six months' inspection trip, that "in twenty years the timber supply in the United States on government reserves and private holdings, at the present rate of cutting, will be exhausted, although it is possible that the growth of that period might extend the arrival of the famine another five years." Mr. Pinchot urges that the magnitude of the danger should not be underestimated, for every man, woman and child in the country would be affected by such a famine. Although about one-fifth of the forest area of the country is made up of government reserves, attention is called to the fact that the government does not control a corresponding fraction of the timber supply, because the government lands are not so good as those owned by private owners. Money is to be asked for to extend the forestry service, and to push the work of reforesting the denuded timber lands, although it is claimed to be utterly beyond the powers of the service to meet the situation and prevent serious trouble. An effort will be made to protect the Appalachian forest and promote the growth there.

The State forester of California has advocated a plan that is being watched with much interest. In that State, under the police power, the forester is attempting to protect the watersheds and to prevent private owners from devastating these lands in a manner that will injure the irrigation of lands lying below. Figures have been produced to show that at the present increase in the value of timber land, the owners of such property are making more by letting the timber develop than they would by cutting and placing the money out at interest.

GRINDING CEMENT

FINENESS of grain is greatly to be desired, both in finished cement and in the raw materials of which it is made. In the new Pfeiffer cement machine the process of grinding is kept separate from the expulsion of the meal, or product of grinding. The last-named operation is effected by means of a fanning mill of peculiar construction which, without employing any sieves, delivers a product of very fine grain. The machine requires much less power than the ordinary machine, so that a very fine cement can be produced more cheaply than common cement is produced by the usual methods.



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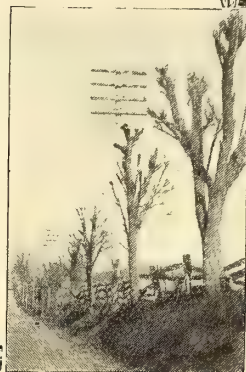
Healthy Trees Are Man's Best Friends

They serve him in a thousand ways—patiently, silently, faithfully. Wounded, diseased or maltreated, they struggle to continue the service but often the odds are too great and they succumb. Tree surgery when properly practiced cures their ills.

If Trees Could Talk, Their Cries of Pain Would Arouse You

to the horror of the butchery here shown. The Davey Experts, trained under John Davey, the father of tree surgery, know trees and can interpret their appeals for protection and help. The plan on which these experts work is fully explained in "Our Wounded Friends, The Trees," a book that we will send free to any tree-owner.

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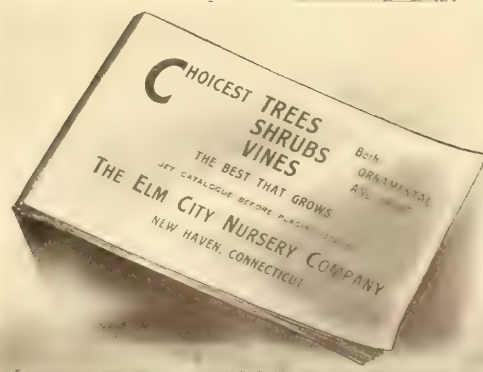
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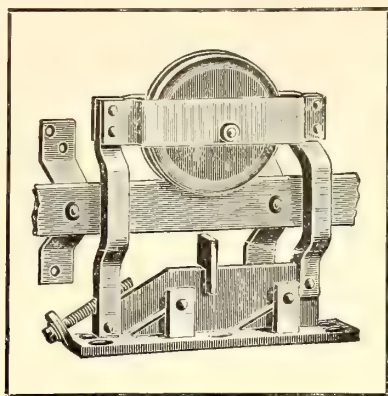
contains the germs of a disease peculiar to rats and mice only and is absolutely harmless to birds, human beings and other animals. The rodents always die in the open, because of feverish condition. The disease is also contagious to them. Easily prepared and applied.

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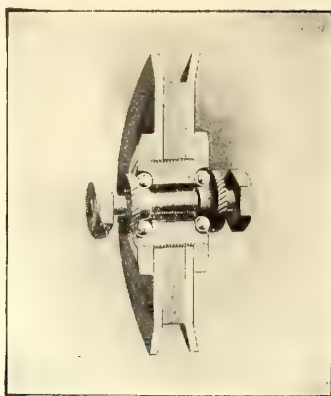


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BRICK ROADS FOR THE AUTOMOBILE

A CORRESPONDENT in Cleveland, O., commenting on our recent editorial, "The Highway and the Automobile," calls attention to the fact that there are a great many brick roads being laid in the territory adjacent to Cleveland, and asks our opinion as to their practical value. As far as the automobile is concerned, there is no question but that a properly constructed brick road affords an excellent surface, in respect of the smoothness of running, the tractive adhesion of the tires, and the limited amount of tire wear and destruction. It is certainly superior to the concrete road as ordinarily laid. Those who have driven their machines at high speed over the Motor Parkway, Long Island, complain bitterly of both the roughness and the inequalities due to the hollows of the surface, the former producing a rapid wear of the tires, and the latter serving to set up excessive vibration at anything but very moderate speed. This was so marked at the last Vanderbilt Cup Race that several drivers were quoted as saying that there was a marked increase of speed in the car when they left the concrete surface for the ordinary macadam.

The smooth face of the brick is less destructive of tires than the file-like roughness of the ordinary concrete surface. Moreover, it is possible to lay the brick with a truer surface than is secured by the ordinary contractors' gang engaged in laying a concrete surface. To true up the surface of a continuous bed of concrete with the exactitude which is necessary to give a smoothly riding surface for high-speed or even moderate-speed automobile travel, is a job calling for no little nicety of workmanship.

Provided the brick be of high quality and the foundations of sufficient depth and thoroughly laid, the brick road forms an ideal automobile highway. The foundation should consist of large broken rock followed by smaller stone or a good quality of gravel, and a layer of concrete. Upon this should be a shallow bed of sand for surfacing purposes, upon which the brick should be laid and carefully surfaced, and grouted into place. The sand serves to give a slight cushioning effect between the concrete and the brick, and also permits of the necessary adjustment of level to bring the upper face of the bricks to the true surface. A State road of this character, built with a proper amount of crown for drainage, should be good for many years of service, and would require but little repairs, except in such sections as are subjected to heavy wagon and dray traffic carried on steel-tired wheels. Heavy concentrated wheel loads would tend to fracture the hard face of the bricks; and unless the bricks were at once replaced, the ceaseless hammering of traffic would quickly produce a low spot in the road. Even where traffic is heavy, however, we believe that, as in the case of a macadam road, immediate repairs, made at the first indication of a breakdown, would serve to give the road, as a whole, a long period of life. A good combination for a State highway would be to build it of macadam with a tarred surface in the suburbs and vicinity of towns and cities, and build it of brick through the country districts. Although the first cost would be heavy, the saving in repairs (that is, if the supervision were close and constant), and the enormous saving in the cost of haulage would, in the course of a very few years, constitute such roads a paying, and in many localities a richly-paying, investment.

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NEW BOOKS

THE GRAPES OF NEW YORK. By U. P. Hedrick. Albany: New York Agricultural Station. Pp. 15-564.

This massive volume, which is issued as a part of the fifteenth annual report of the Department of Agriculture of the State of New York, is a sumptuous quarto of almost monumental proportions, and is one of the handsomest books on fruit that has been published during the year. Its purpose is to record the state of the development of American grapes, and while its title implies that this has been done for a single locality, its editor properly adds that in this respect New York is representative of the whole country. Its contents is, indeed much broader than the title indicates and includes brief historical narratives of Old World and New World grapes; an account of the grape regions and of grape-growing in New York, with statistics relating to the grape, wine and grape juice industries of that state; a discussion of the species of American grapes; and the synonymy, bibliography, economic status, and full descriptions of all of the important varieties of American grapes. The footnotes give biographical information as to persons identified with grape culture, as well as many historical data.

The text of the book has been prepared with the utmost care and is exceedingly full and complete. The illustrations, which are an essential part of the publication, are in full color, and many of them are very beautiful and lifelike. It is a book that offers, on every page, ample evidence of the care lavished upon it, while its pictorial parts are of the greatest interest. It is a notable contribution to the literature of the grape and is a work that must greatly redound to the advantage of every one who has taken part in its production. Its publication is a fine testimony to the liberality of the state of New York in agricultural matters.

A NEW LIGHT ON ANCIENT EGYPT. By G. Maspero. New York, 1909: D. Appleton & Co. 8vo. Pp. 315. Price \$4.00, net.

Professor Maspero is one of the most noted Egyptologists in the world and he states in his preface that he has been fifteen years trying to bring science, supposed to be comprehensible only to experts, within the reach of the ordinary man and it is gratifying to find that his time has not been wasted. He has drawn his materials from everything that can be discussed with educated people without demanding anything more than a little attention. Excavations, religion, travels, popular customs, literature and history have each and all furnished him with subjects. The result is a living picture of the researches made in the domain of Egyptology during a period of fifteen years. The book is a most fascinating one to all who may have even slight appreciation of what Egyptology really means. Many chapters deal with the very latest discoveries and matter that have never before appeared in book form.

HINTS ON HOUSE FURNISHING. By W. Shaw Sparrow. New York, 1909: John Lane Company. 8vo. Pp. 308. Price, \$3.00, net.

The sumptuous volume before us is filled with valuable hints on house furnishing and decoration. The plates are particularly well executed and are inserted allowing the text to be printed on paper which is agreeable to the eye and to the fingers as well. After a general introduction which

Finder of Men



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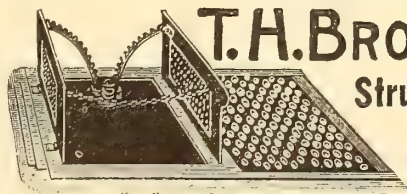
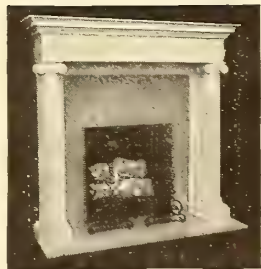
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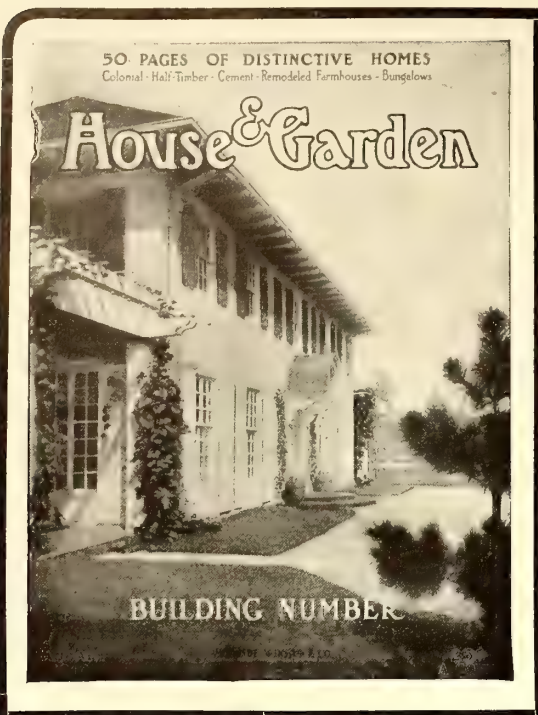
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SEWAGE PURIFICATION AND DISPOSAL. By J. J. Cosgrove. Pittsburg: Standard Sanitary Mfg. Co. Pp. 222. Price, \$3.00.

This admirable treatise aims to present in concise, ready form, rules, tables and data for designing and proportioning purification works. It summarizes much scattered professional knowledge and research, and is offered as a guide to communities grappling with the very difficult problems of which it treats. The purpose of the author has been to show the methods of constructing various types of sewage purification plants, their details and proportions, together with a description of the materials best suited to the purpose. While the book is one primarily designed for the engineer, the subject-matter is presented in an attractive form and the various problems considered are stated in a way that the layman himself may readily comprehend. Numerous diagrams and figures add to the lucidity of the text and add greatly to the value of the book. There is a careful index.

THE ENGLISH HOUSE: HOW TO JUDGE ITS PERIODS AND ITS STYLES. By W. Shaw Sparrow. New York: John Lane Co. Pp. 348. Price, \$2.50 net.

A charming and delightful book, meriting the warmest praise. The author sagaciously remarks that the writing of books for architects only, can not do much good, since no appeal is made to the real patron and paymaster, the nation as a whole. He rightly believes that the public ought to be interested in architecture, and thinks very truly that, as certain skillful writers have made abstruse science popular and attractive, a similar skill might be applied to architecture with equal success. He offers his book on the English home as a contribution toward that end, and he is more than justified in hoping for the realization of his expectations.

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DRY-FARMING: ITS PRINCIPLES AND PRACTICE. By William Macdonald. New York: The Century Co. Pp. 290. Price, \$1.20 net.

The term "dry-farming" is a new phrase which originated in Western America. It may be defined as the conservation of soil moisture during the long periods of dry weather by means of tillage, together with the growth of drought-resisting plants. It is not, of course, points out Prof Macdonald, farming without moisture, for that would be clearly impossible. The phrase is now widely and loosely applied to a particular form of farming in all places where the normal rainfall ranges from zero to 30 inches per annum. The method, although constantly spoken of as new and modern, is really old; but its latest applications and the fruitful results obtained from it have attracted more and more attention to this system of agriculture, which has invariably yielded rich results wherever properly applied.

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WROUGHT-PIPE DRAINAGE SYSTEMS. By J. J. Cosgrove. Pittsburg: Standard Sanitary Mfg. Co. Pp. 145.

Mr. Cosgrove has laid the plumbing world under a distinct debt of gratitude for this excellent handbook, which is, in many ways, a model of its kind. Handsomely printed in an attractive dress, carefully illustrated with diagrams and other drawings, provided with numerous tables and an index, it contains everything essential to a presentation of its subject.

The author points out, in his preface, that the scope of his book is much broader than the name would apply. A more descriptive title, he adds, would have been "The Manipulation of Wrought Pipe." While particularly descriptive of drainage systems the book is equally applicable, in its practical direction, to the needs of heating plants, refrigerating systems, pipe lines, water systems or any uses to which pipe may be put.

WILD FLOWERS EVERY CHILD SHOULD KNOW. By Frederic William Stack. New York: Doubleday Page & Co. Pp. 15-1411. Price, \$1.20.

A thoroughly useful book. The author rightly states that it does not require a preparatory course, nor any special instruction, to become acquainted with the more common wild flowers and their individual traits, and then proceeds to show how this knowledge may be acquired in a very direct and simple manner. The book is not a "child's book" in the common acceptance of the term, but is an elementary treatise on plants, very carefully prepared, admirably condensed and eminently useful in its plan and arrangement. The key to the subject, as Mr. Stack presents it, is the color of the flowers, all the plants described being grouped under their own colors. Identification is thus reduced to the simplest method, and the whole kingdom of wild flowers is easily opened to the beginner. It is a book some older folk will like, too, and find exceedingly useful.

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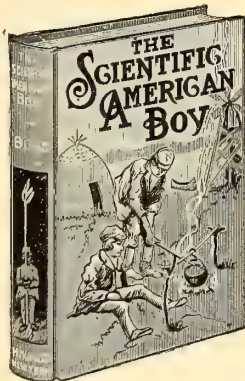
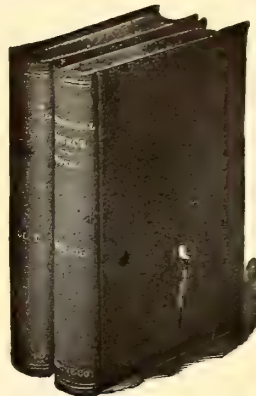
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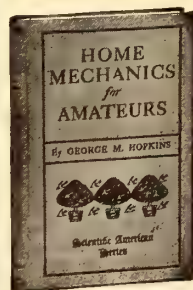
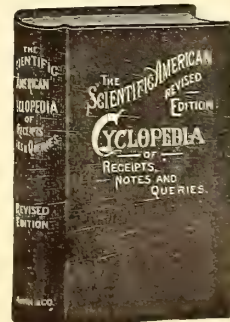
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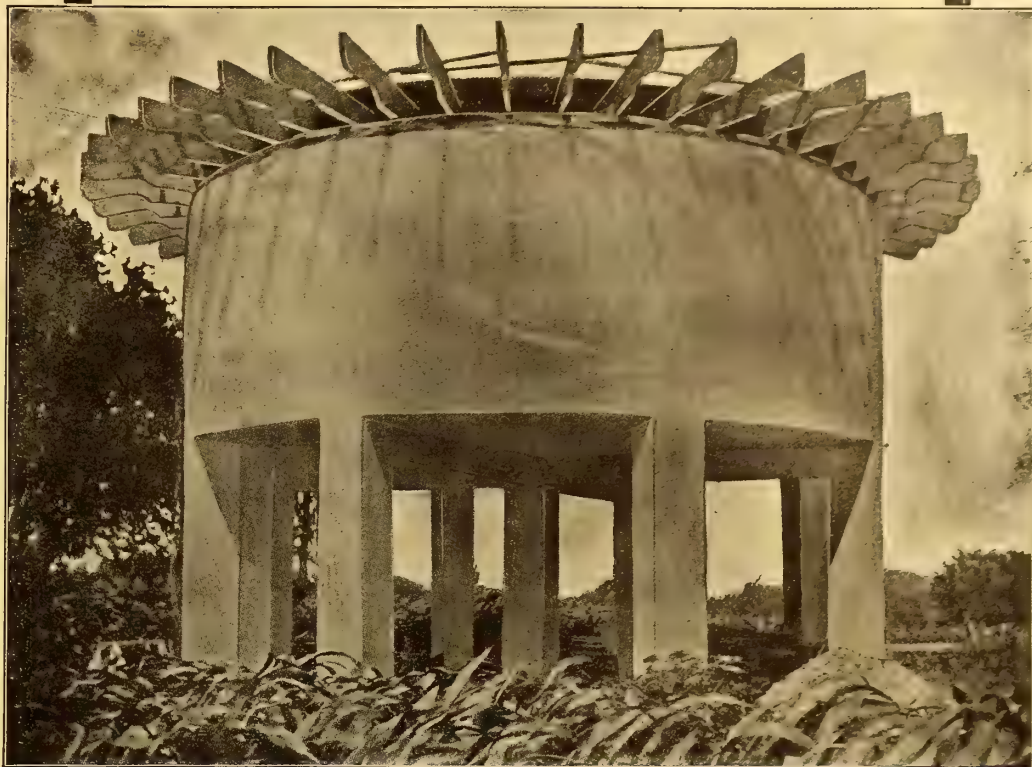
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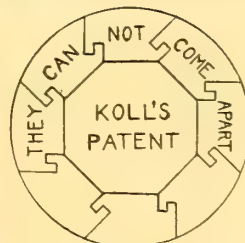
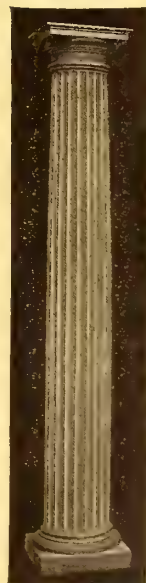


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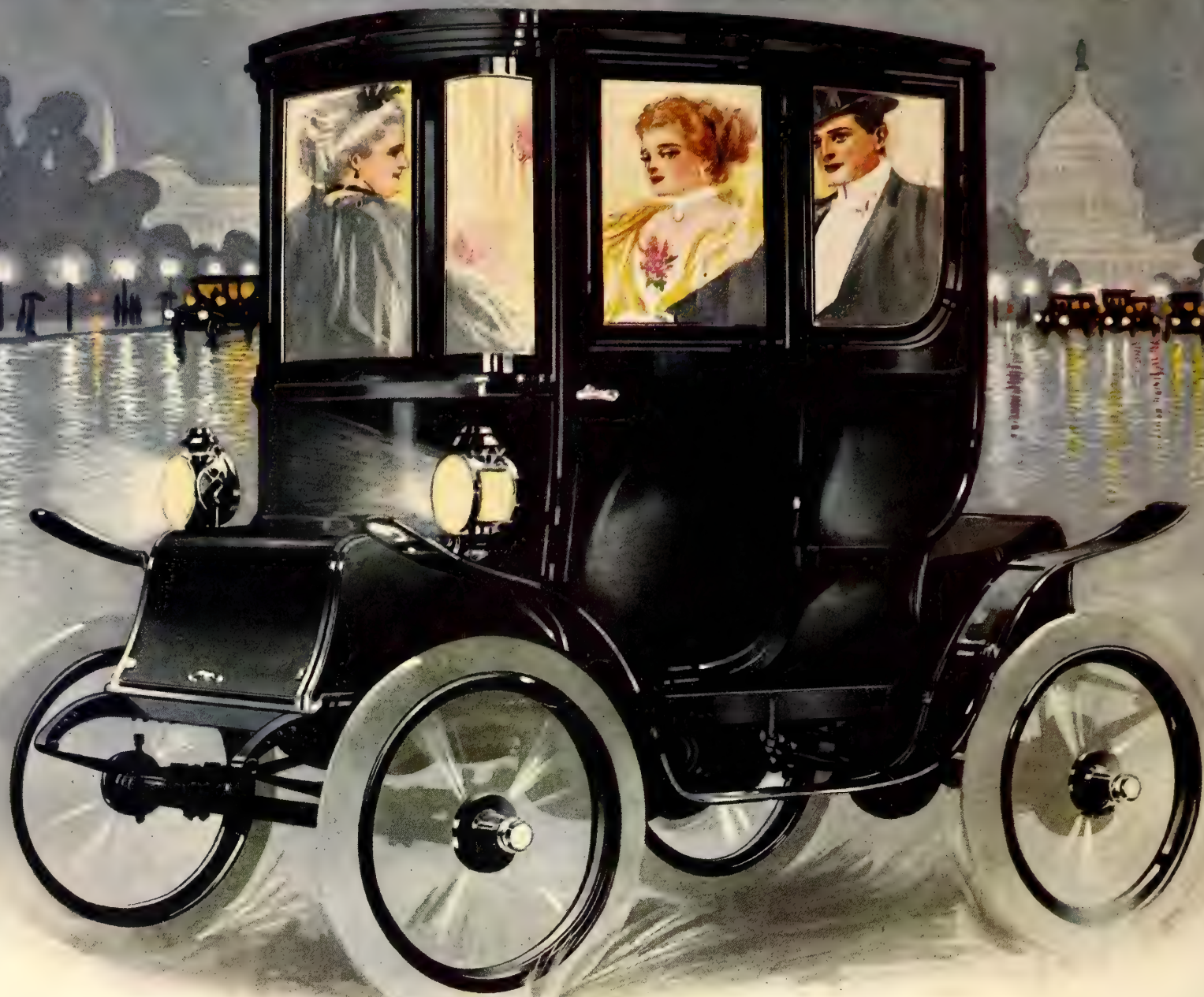
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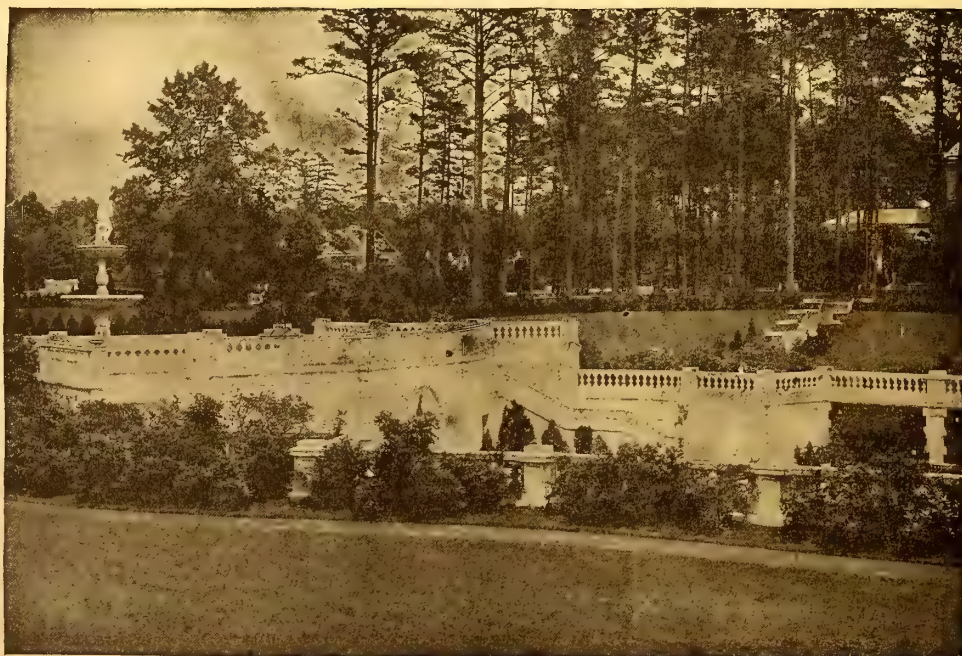
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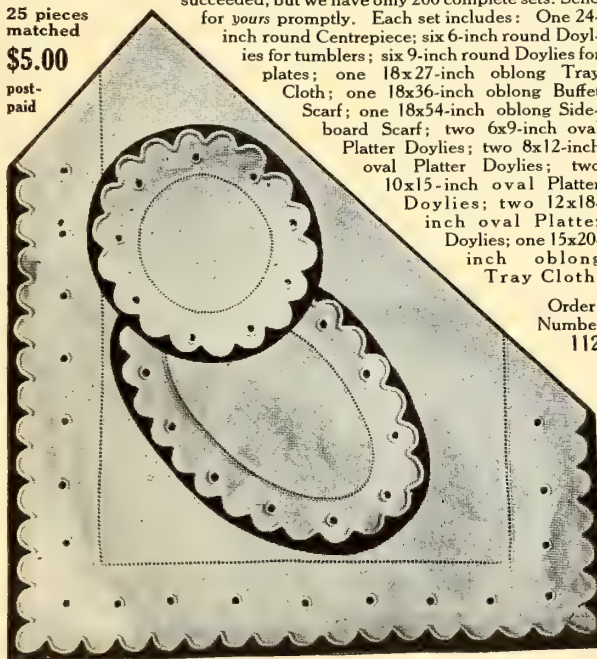
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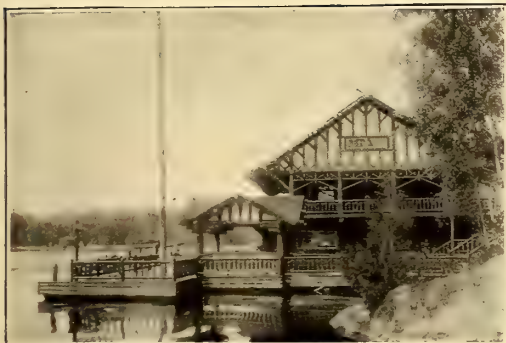
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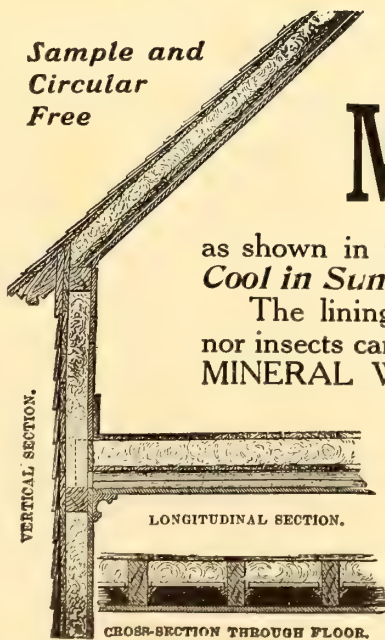
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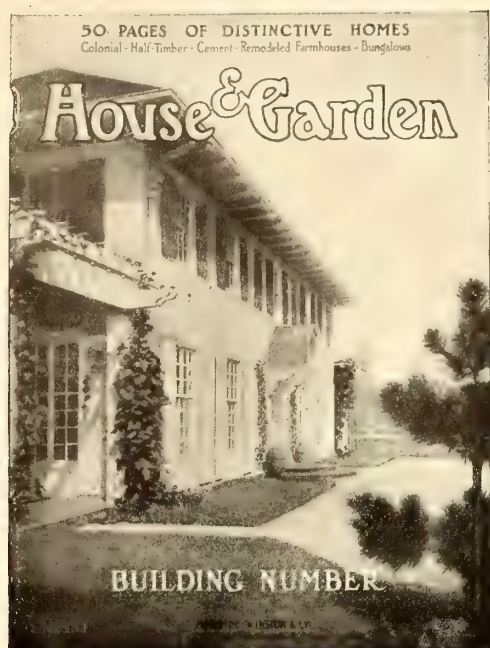
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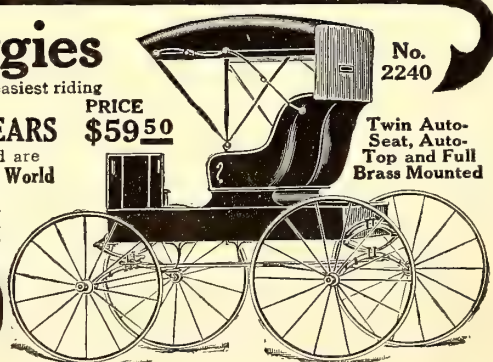
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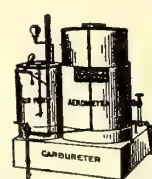
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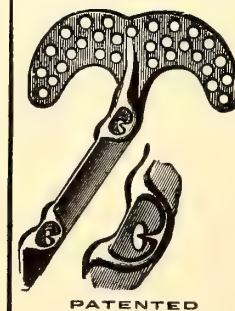
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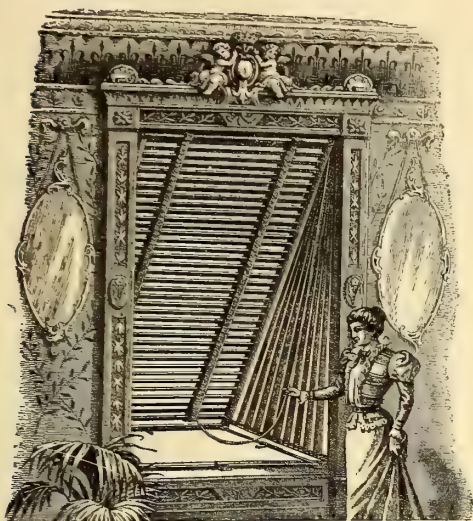


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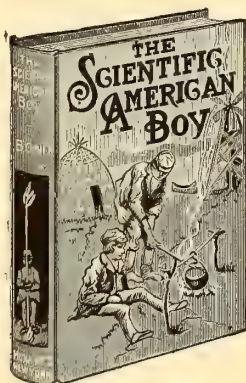
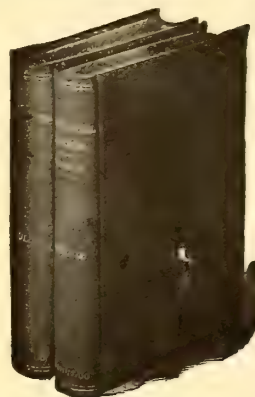
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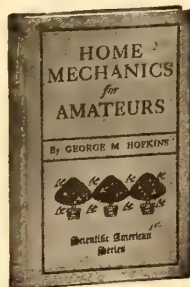
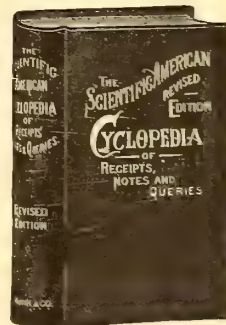
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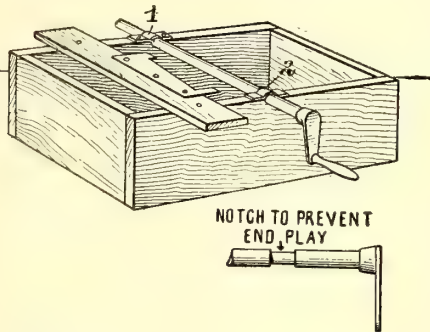
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THE ARCHITECTURAL LEAGUE EXHIBITION

THE annual exhibition of the Architectural League, which is now being held in the Fine Arts Building, commemorates the 25th anniversary of its existence. The League was organized as a sketch club in 1881, by eighteen men; re-organized in 1885, and incorporated in 1888 by a body of sixty-six members. Its membership consists of architects, with some sculptors and mural painters; the last coming to the League under the head of the allied arts; for the work of the sculptor and mural painter are in reality closely allied to that of the architect. Before the Fine Arts Building was constructed, the exhibitions of the League were held in various French restaurants throughout the city; but since 1892 the Society has occupied its own rooms with galleries for its own exhibitions. As the Society has grown in importance it has developed from a social organization to one devoted to the holding of annual exhibitions, wherein the current work of its members in architecture, sculpture and painting, is shown with the purpose of impressing upon the public mind the value of better architecture, and this is what it should do. As years have gone by, the atmosphere of the annual exhibition has changed from time to time, being an expression of the personnel of the various committees.

The influence of the Society was originally that of the American trained architect, who was represented by men graduated from the various schools of architecture in this country. As the organization developed, that influence, possibly through some lack of interest, became less conspicuous, while the ever present enthusiasm of the student of the French school became a dominant factor in the character of the exhibitions which have been held during the past four or five years. The result is, that the various committees of the more recent exhibitions have forgotten that architecture is more the expression of the desire of the public through the architect as its instrument, than of its desire of being an instrument of the architect. As an exhibition of finely executed drawings it is a great success; it is splendid. But as one of domestic architecture it is an absolute failure; that is, from the layman's point of view. This is not a criticism of the gallery of mural paintings, which comprises a splendid collection, carefully selected and hung in a most masterly manner. Neither is it a criticism of the exhibit of sculpture, which is excellent, nor of the high standard of the collection of drawings hung in the gallery of architecture; but it is a criticism of the lack of domestic architecture in the gallery devoted to architecture. It is all very well for the architect to visit the exhibition, for he can see and enjoy with keen appreciation the beauty and charm of the many excellent drawings presented, but for

the layman it is quite different. What the latter wants, and he certainly should be considered, is an exhibition of less technique and of more practical use, for the reason that the only object of his visit to the exhibition is to find out what is being done throughout the country and to be able to observe the best work of a particular style as done by a particular architect.

Architects as a class are too much given to introspection. They live within themselves in one room and forget when holding aloof in their own atmosphere that they are apt to neglect a public with money and a taste to spend it, whose point of view should to an extent enter into the consideration of the profession.

He wants information and help and that is why he goes there. Architecture, to-day, is to a certain extent classified, and it does not matter whether the subjects exhibited present the work of the man who stands at the head of his profession, or at the bottom of the ladder; the subjects submitted should stand or fall on their merits.

Where there is one man who wants to see a municipal or commercial building, there are a hundred who are interested in the country house. This interest is necessarily brought about by the great demand for, and the growing interest in, the country house and its gardens, and these are the men who should receive some consideration from the committee of the architectural exhibition. Out of nearly one thousand exhibits, there are not more than fifty designs showing country house work, and that a jury consisting of a serious and intelligent body of men, should accept the few examples of such work, is truly astonishing, and this, for the reason that, with very few exceptions, the list exhibited has no architectural merit, and the houses shown are not a representative expression of the best work being done throughout the country.

The Architectural League has an important place to fill in the development of architecture in this country, and it is hoped that in the future the men of both the American and French schools will combine their forces and co-operate in such a manner as to present to the public next year an exhibition of a more popular character.

There is an excellent opportunity for the Architectural League to create a permanent club on the lines of what was originally intended for the National Arts Club, where the best efforts of its members can be placed on exhibition at all times of the year. This would be an assistance to the architect; the sculptor and the painter, in maintaining a continuous exhibition, and the means of performing a great work in uplifting the public mind to a higher standard of beauty in architecture and its allied arts.

The present system of cataloguing the exhibition is not a good one. The inconvenience to which one is put in examining a particular exhibit and finding that it is necessary to consult the catalogue is very annoying. For instance, the first subject ex-

hibited in the main gallery is numbered 52, while directly over it is another exhibit numbered 425. One can very readily see the inconvenience of such a system, but fortunately it is one that can be remedied by cataloguing the exhibits in a consecutive manner. It is to be hoped that the committee having this matter in charge will make some decided improvement in this direction in the future, so as to relieve the visitor of the annoyance and confusion of the past few years.

An important feature of the annual dinner of the League was the splendid tribute paid by its members to the late Charles F. McKim in the announcement of the subscription by his friends of nearly enough money to ensure the endowment of the American Academy of Rome, a movement in which the deceased took so active an interest.

The American Academy of Rome forms a very important factor in raising the standard of art throughout the United States, and it is one that should receive hearty support from those who are able to give it. It is to be hoped that the day is not far distant when the Academy will be placed on a permanent financial basis and that the dream of the eminent architect may be realized.

One of the most important exhibits in the domestic architecture is the Adams house, the work of Frank E. Wallis. This house can be cited as the type which appeals to the layman, for it shows a design of a building that has an apparent cost, and is not too expensive, nor too cheap, nor too ornate, nor too plain, and at the same time suggests the comforts of a house designed to meet the necessary social requirements. There is evidence of a very careful study of the general design, and especially of its details, which are particularly fine.

The most imposing plastic cast exhibited is that of the great bronze doors for the United States Naval Academy, presented by Col. Robert Means Thompson. Miss Evelyn B. Longman of New York was the sculptor, and it is not very often that so distinctive a work has been contributed by a woman. Each of the doors bears an allegorical group. The doors are intended as a memorial to the Class of 1888.

Daniel C. French has contributed a very handsome design for a garden fountain which occupies a prominent place in the center of the first gallery. A Celtic cross, the work of A. Stirling Calder, is worthy of consideration.

The interest of the exhibition centers in the gallery of mural paintings in which there is a very striking canvas, "The Conqueror," by Carl Hassman, an Austrian painter, portraying a mounted Hun surveying the land of Italy, the leader of a horde which is soon to lay the country waste with fire and sword. Another mural decoration which has a special charm is a beautiful panel contributed by Robert V. V. Sewell.



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HOME-GROWN SUGAR-BEET SEED.

AS a result of an experiment which has been conducted near Phoenix, Arizona, it has been found that sugar-beet seed can be grown successfully in that section of the country, and better still, that it can be grown in a single year. In Arizona it is customary to plant sugar-beet seed the latter part of November, harvesting the crop the following July. It has been found that if the seed is planted a month earlier in the fall the beets will produce a crop of seed the following year. This takes sugar beets, for that section of the country, out of the biennial class, and puts them in with the winter annuals. It means the saving of a year in the production of seed, and will greatly simplify the process.

Nearly seven million pounds of sugar-beet seed are used in the United States every year. At present the bulk of this supply come from Germany, and costs the American grower about ten cents a pound. The German method of producing sugar-beet seed is rather complicated. When the beets are dug in the fall a number of the best specimens, averaging in size from 20 to 24 ounces, are selected for "mothers." A sample taken from each of these mothers is analyzed for sugar content. In some cases the density and purity of the juice are also determined.

These mothers are divided into grades, according to sugar content, and stored in silos during the winter. Those that fail to come up to the required standard are discarded. In the spring these mother beets are set out and cultivated carefully. From them the seed of commerce is produced. By these painstaking methods the sugar-producing ability of the beets is kept up to its present high standard, and even increased from year to year.

Recently beet seed has been grown to a limited extent in the United States in Utah and Washington. This home-grown seed has shown greater yielding ability than the seed from Germany. The beets from home-grown seed have better quality and higher vitality, and seem better adapted to American conditions. Owing to the difficulty of production, however, beet-seed growing in Washington and Utah has not spread very rapidly.

With more favorable climate conditions prevailing in Arizona, especially the absence of severe winter weathers and the dryness at harvest time, it may be possible to make beet-seed growing an important industry there. Of course, since the beets are not dug in the fall, they cannot be seeded as carefully as is done in Germany. Whether the quality of the product can kept up by other methods of selection remains to be proven. Perhaps some method of breeding like that which is giving such good results in the corn fields of the Mississippi Valley may be adapted to sugar beets. The United States Department of Agriculture has been asked to investigate the matter. The results of this investigation will be awaited with much interest by the people of the sugar-beet-growing districts.

In the March Scribner

Trekking Through the Thirst to the Sotik

A picturesque account of a march through the waterless country, with many hunting incidents and impressions of the natives.

By *Theodore Roosevelt*

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Garden Competition for 1910



The Garden in Your Town



THE publishers of American Homes and Gardens desire to announce a Garden Competition for 1910, and will offer \$100 for the four best planned, developed and successful suburban or village garden. The Garden Competition Editor of American Homes and Gardens wants to know if your garden is a success. If so, write and tell him about it. Tell him how you planned and how you planted your garden, and what success you had with it; tell him of the plants with which you had the best results and the ones which were failures; how you arranged for a succession of bloom; how you made use of the natural limitations of the plot and what mistakes you made. We want you to help us so that we may help others to beautify their surroundings, for this is the object of this competition. You need not be a skilled writer to tell the story of your garden success. Tell it in your own way.

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Competitors for the prizes must comply with the following conditions :

- 1 A general description of the garden, consisting of not more than fifteen hundred words, giving the size of the plot and the kind of plants used in planting, must be submitted. Give any details which you think will be of interest.
- 2 Drawings of the plot are to be made in black and white, drawn to the scale of eight feet to an inch, showing the position of the various plants and shrubs. Name each variety of plant on the plan by a number, giving a separate list with a corresponding number by which each plant may be identified.
- 3 Photographs of the garden must be submitted. It will be of interest to send as many photographs of the garden, taken from as many points of view and at different times in the summer, as illustrate the changes in the garden's appearance to the dominance of certain flowers. The photographs must be printed on printing-out paper and are to be not less than five by seven inches in size. A photograph of the site of the garden before it was developed would add interest to the series.
- 4 Descriptions, drawings and photographs are to be marked with a pseudonym which is to be enclosed in a sealed envelope containing the name and address of the competitor. All descriptions, plans and photographs are to be sent free of any name or address on them except the pseudonym. Express or postage charges must be fully prepaid.
- 5 Just as soon as the judges have rendered a decision upon the four best gardens submitted for this competition, they will notify the Editor who will open the envelopes bearing the pseudonym and containing the competitor's true name, and will at once notify the successful competitors that they have won the prizes.
- 6 The Garden Competition Editor reserves the right to publish in American Homes and Gardens all prize gardens and those gardens which in the opinion of the judges are worthy of honorable mention. The names of those whose gardens are reproduced will be published with the photographs.
- 7 Contributions are to be submitted to the Garden Competition Editor, American Homes and Gardens, Munn & Co., Publishers, 361 Broadway, New York.
- 8 The garden competition closes September 15, 1910. Contestants need not to be subscribers to American Homes and Gardens, and no charge or consideration of any kind is required. No photographs, manuscript or plans will be returned.

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A Hint of What this New Book Is Like

Herewith we reproduce in miniature the cover and one of the illustrations of this book. Flowering Crab-Apple, shown in the lower picture, is thus described by the book: "With perfume laden—sweet fragrance with every breath wafted here and there by spring's soft air; with harmony of color—blushing pink and rose from opening bud to falling flower so bright and fair; this is the call of the Wild Crab-Apple. The answer, gentle reader, you know too well, for who has not responded? Their dainty flowers, with enticing sweetness, make fast friends everywhere. They are very hardy and thrive in almost any kinds of soil, making both ornamental and desirable specimen trees for lawn or garden."

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"Flowering Trees and Shrubs" has 64 pages and covers, is printed on fine book paper, has been carefully written from ripe experience of the management of Biltmore Nursery, and is illustrated from specially made photographs used by no other nurseryman.

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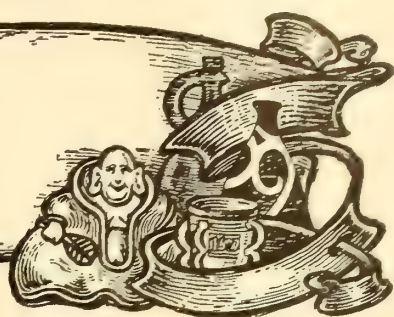
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American Homes and Gardens for April



Rock Gardens

The widespread interest in the building of rock gardens in the past few years has inspired the idea which forms the subject of the opening article in the April number. The author of this article, Charles Downing Lay, tells in a very interesting way how it is possible to build and maintain a rock garden at a small expense. The illustrations, which include the frontispiece and several full-page plates, are numerous and of the deepest interest.

A Group of Stucco Houses

A practical group of stucco houses forms an interesting double page for this number. This subject ought to be very interesting and helpful to those who are anticipating the building of a stucco house, for there is a widespread interest throughout the country at the present time in the use of cement as a material for the construction of the modern country or suburban house.

Furniture for the Home

Esther Singleton, the well-known author, will present her first paper on appropriate furniture for the home, which will be devoted to the hall, living and dining-room furniture suitable for the English house. This series will be helpful and valuable to any one who requires the best advice on the subject of the proper furniture for the home, and no one is better qualified to give such information than Miss Singleton, whose wide experience as an author on furniture makes her an authority on the subject.

A Colonial Residence

Paul Thurston describes the handsome house built for Stephen Bartlett, at Chestnut Hill, Mass. It is a fine dwelling, a good type of the Colonial house, and an excellent example of a gentleman's country house.

Gobelin Tapestry Works

Gobelin tapestries are always interesting, and Frank Brown adds to it by his story, which tells how they are made. One of the illustrations presents a beautiful example of ancient tapestry depicting Jephtha's daughter.

The Homes of Five Architects

An interesting story describing the homes of five architects of the Middle West, is told in an attractive manner by Francis Durando Nichols. The article is profusely illustrated with exterior and interior views of the houses, their floor plans and other detail features. It is not often that one has the opportunity of looking into the home of an architect, for the reason that modesty on the part of the profession often precludes a publication. It is a good thing for an architect to show what he can do when he has a free hand, and it is also a pleasure for the layman to have an opportunity to see what he can do in the designing of a modern house to be built at a moderate cost. The group illustrated in this article is representative of a good type of small house.

Furnishing the Apartment

The fourth paper on Furnishing the Apartment, by the well-known writer, Lillian Hamilton French, will be devoted to the bedroom. This article is well illustrated, shows the proper furniture and draperies to use in a bedroom, and is particularly interesting for the reason that Miss French describes how an ordinary chamber, with white plastered walls, can be made, with a little expense, an attractive room by panelling the walls with small moldings in such a manner as to present the effect of a study of the French school. The first paper on Furnishing the Apartment was devoted to the hall and appeared in the January number of *American Homes and Gardens*, while the second paper, on the drawing-room appeared in the February issue. The third paper on the dining-room is published in the current issue. These papers are of particular value in furnishing the country or suburban home as well as the apartment.

A Protected Grape Fruit Grove

An interesting and timely article is prepared by C. M. Berry, on the value of protecting young fruit trees from a sudden frost. The illustrations are a conspicuous aid in showing how it can be done. This scheme of fruit protection is applicable to any fruit grove, whether it is in Florida or in Maine.

The Effect of Colored Light on Vegetation

The eminent French savant, M. Flammarion has for many years been studying the effects of sunlight upon vegetation. Jacques Boyer tells in a concise manner how the researches and experiments have been conducted.

A Novel Method of Growing Potatoes

In the gardening world there is another instance at hand to prove that many of the most valuable discoveries have come to light through accidents, and S. Leonard Bastin tells of one in an illustrated article on a new method of growing potatoes.

Interior Decorations for the Home

Alice M. Kellogg presents the second paper of her series of Interior Decorations for the Home, and it takes up the subject of appropriate window draperies for the various rooms of the house. The illustrations will show the latest designs in curtain hangings, and the text will tell how they can be made and the cost of the same. The current issue contains the first of the series of papers by Miss Kellogg, and is devoted to the last word in wall papers. These articles ought to be of interest to all who are furnishing or refurnishing their homes.

A Country House

The splendid country house built for G. St. John Abbott, at Concord, Mass., forms the subject for a very excellent article. The illustrations are from new and original photographs expressly made for this magazine and they present views of the exterior and the interior, as well as those of the garden which forms a part of the estate.

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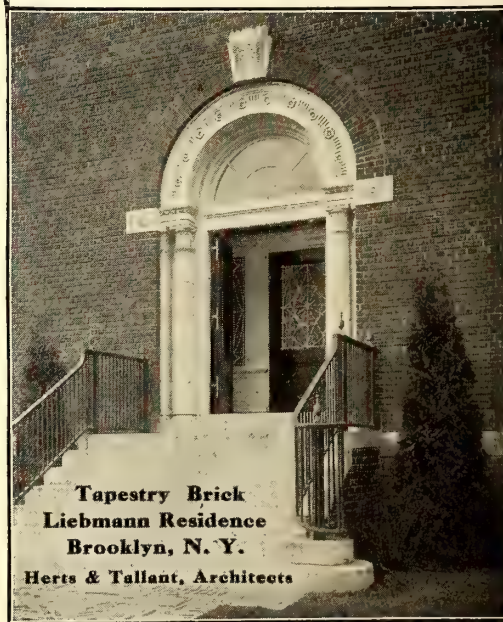
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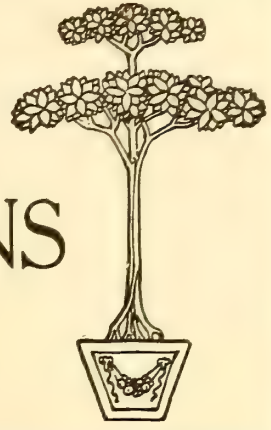
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CONTENTS FOR MARCH, 1910

	PAGE
"EVENTIDE"	Cover
THE IMPOSING ENTRANCE IS THE IMPORTANT FEATURE OF THE HOUSE.....	82
NOTABLE AMERICAN HOMES—The Home of Arthur C. Steinbach, Esq., Asbury Park, N. J. By Barr Ferree	83
FURNISHING THE APARTMENT—III. The Dining Room.....By Lillian Hamilton French	89
CALIFORNIA BUNGALOWS—Costing from One Thousand Dollars Upwards. By Helen Lukens Gaut	92
AMERICAN HOMES AND GARDENS' GARDEN COMPETITION—The Fourth Prize Garden. Won by Mrs. Anna H. Condict, of Essex Fells, N. J.	95
"KENMORE"—The Home of Betty Washington, Now in Possession of the Howard Family. By Edith Dabney	99
WATER GARDENS OF CALIFORNIA.....By Kate Greenleaf Locke	103
TRIMMING STREET AND LAWN TREES.....By E. P. Powell	107
THE RESIDENCE OF WALTER D. ROWLES, Montclair, N. J.By Robert Prescott	108
A HOUSE BUILT FOR MR. J. A. GARRETT, at Bronxville, N. Y.....By Paul Thurston	110
A HOUSE BUILT FOR MR. E. L. CLIFFORD, Wilmette, Ill.By Henry Hawley	111
INTERIOR DECORATION OF THE HOME—Wall-Papers.....By Alice Kellogg	112
THE HOME OF A. F. NORRIS, ESQ., Montclair, N. J.....By Francois Picard	114
GARDEN NOTES—Fifteen Good Lilies.....By Charles Downing Lay	116
OPEN AIR ORCHARD HEATING.....By W. Frank McClure	117
A COMBINED FORCING BED AND STORAGE PIT.....By Richard Maxwell Winans	118
CORRESPONDENCE	120

Garden Competition Announcement for 1910

American Homes and Gardens for April

The Editor's Note-Book

New Books

Home-Grown Sugar-Beet Seed

The Relation of the Audubon Movement to the Sportsman

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The imposing entrance is the important feature of the house

AMERICAN HOMES AND GARDENS



Volume VII

March, 1910

Number 3

The Home of Arthur C. Steinbach, Esq.,

Asbury Park, New Jersey

By Barr Ferree



THIS seldom that a modern house is, with any success whatever, built in a classic style of architecture. Our conditions of life and climate are almost invariably opposed to those of the classic period, and most of such houses as have borrowed classic motifs or which have been built on classic models have failed to provoke more than a moderate curiosity that they should have been erected or that any one could have been expected to live in them. The home life of the ancient Greeks and Romans, and the

houses they built for the convenience of that life, were so radically different from the home life and the houses of to-day that the problem of adapting classic models to modern conditions has long since been given up as futile.

But the difficulty has been, in most cases, that the modern classic house has been erected as a quite literal transcription of the ancient classic house. In such a case it amounts to little more than a museum, a thing of curiosity, possibly one of beauty, probably one of ingenious adaptation, but never a home in the modern acceptance of the word; never a pleasant place to live in; never a comfortable



The house is built of cement and is well balanced by its two porches

home; never even a desirable house. How could it be, when one must be continually adapting oneself to rooms and apartments for which there is no modern use, where one cannot live naturally, and where one is perpetually wondering what to do next in rooms one, naturally, would never think of doing anything in but look about and wonder?

Perhaps we modern builders have deprived ourselves of many agreeable opportunities and of the use of much beautiful architectural detail by the apparent necessity of rejecting classic models and ideas in our modern homes. No architectural ornament was ever so exquisite as that carved and cut by the ancient Greeks; no architectural ideas have equalled theirs in purity and directness of expression; no architecture is at once so elevated and so refined. Perhaps we have lost something by not being able to design our houses with this splendid wealth of beauty; but at least we have been able to keep it intact and so have come to look upon it as something to be revered and admired, something to be treated as very rare and beautiful, something we can use sparingly, perhaps, but certainly only with the utmost care and regard.

There are very many things that are extremely simple after once the way to do them has been made clear. The great underlying fact that has made Mr. Steinbach's house so perfectly successful, is so very simple that it is a wonder it has never been thought of before. Perhaps it has; but I am not familiar with it in precisely this form.

And now for the secret of this success. Briefly it was to design an exterior in which classic motifs would

be used in a way that would at once declare this house to be designed in the style of classic Greece; and then to arrange the interior in a thoroughly modern style and without any regard whatsoever to classic precedence! That's all; but it's enough. No doubt some purist will rise up in imaginary agony against such a juxtaposition and combination of the old and the new. Let him have his say; it will neither destroy the integrity of this house nor the reasonableness of this procedure. The thing has been done, over and over again, in other styles. Time and time again plain, simple old-fashioned houses have been built to contain within their boarded or shingled walls rooms and apartments of astonishing state and splendor, and no one seems ever to have felt there was impropriety in the combination.

I hold no brief for either Mr. Dodge or Mr. Steinbach, but they have, between them, contrived as interesting a house as I have seen, contrived it in a style not new or novel, but used in a new way, and have, moreover, achieved a thoroughly livable house, which, after all, is the most that can be asked of any dwelling.

Mr. Steinbach's house, designed by Mr. F. H. Dodge, is a villa intended for residence throughout the year. This circumstance is no longer novel in seaside homes, but is worthy of mention. The house is neither large nor imposing, but it is thoroughly interesting, a quality of vastly more notable import than measurement by size and cost. It stands on a comparatively modest plot of ground, overlooking Deal Lake, and is at the junction of two principal streets. One would, therefore, hardly describe it as a sea-shore house, although built in a very notable seaside resort.

If a name be needed, it is quite distinctly a country villa, quite well adapted to village environment.

The plan is somewhat derived from the letter U. That is to say, it consists of a main front portion, of which the center is projected forward, with two wings or L's at the back, with a charming little court between them. This is now open to the sky and at the rear, but Mr. Steinbach proposes, at some time in the near future, to enclose it entirely with glass, and thus convert it into a sort of winter garden, a use to which both by situation and by size it is admirably adapted.

The initial idea, if the house being a modern interior with a classic exterior, the problem of clothing the outside in competent, correct and dignified architectural



The steps leading to the entrance of the house

form remained the chief task of the designer. In no sense is this ever easy, and in fact the success of the whole structure might readily have been fatally injured by an over use of detail, of which the originals exist in such tempting quantity and variety. Whatever temptations of this kind may have beset Mr. Dodge, he quickly put them to one side. A rather square, rigid form seemed best adapted for the main exterior lines. This doubtless agrees with the general form of the Greek house, although as no such structures have survived to our time we cannot tell precisely what they were like. They were perhaps much more formless than the design evolved by Mr. Dodge, but as he had no precedents to be literally followed, he was justified in developing the ornamental exterior chosen for this house.

The color of the exterior merits attentive study: it presents a careful symphony in white and white tones. The house is built of cream-colored stucco. The cement string course or band between the two stories is white. The exterior wood trim, including the window frames and the cornice, is a very light shade of pearl, a white, delicately tinged with blue. The base of the porch columns are painted red, the pearl of the wood trim being used for their upper parts.

The house is entered by a porch which is within its main lines and is an integral part of it. There is a wide central opening, with a column at each end, and a narrow window opening on each side: openings of similar character are on the ends of this projected portion. Originally built and planned as an open porch, a winter's use dictated the prudence of enclosing

the open spaces with glass, and this has been done since the photographs which accompany this article were taken. This glazing has considerably helped the exterior, although it has shielded, somewhat, the brilliant coloring of the interior, which has been treated in the Pompeian style, with a broad red dado, while the gray walls and ceiling are painted with Pompeian designs in brilliant color. The floor is cement, in large squares of white and black.

The center inner wall of the vestibule, as it must now be called, is solid, the doorway being to the right and a window to the left. The inner door opens immediately to the hall, and with the first step beyond the threshold the classic character which has domi-

nated the exterior is left behind, and one finds oneself in a modern house, a house that differs in no way from any other modern dwelling save in the interest of the rooms and the individual and characteristic way in which they are finished and furnished.

As a matter of fact, you not only enter the hall, but you enter the whole house. The chief rooms of the first floor open into each other, so that everything is more or less clearly discernible from the entrance door. To the left is the dining-room; almost in the center are the stairs to the second floor; to the right, and beyond, is an apartment you presently discover to be the billiard-room. And when your examination has been finished you will find that the service rooms and kitchen are in the wing parallel to this last. The

raison d'être of the two wings is thus clearly apparent: the billiard-room is given light on two sides, and the service department is completely separated from the rest of the house. It is an admirable plan, very beautifully worked out.

The hall is treated in green and white. The woodwork is white; the walls are lined with green silk damask. There is a low dado in panelled wood, and a somewhat deep cornice which supports the geometric ceiling. At the end of the room on the right is the fireplace and mantel. The former has hearth and linings of gray brick; the latter is constructed of imitation Caen stone, and has a shelf supported by carved figures and a panelled over-mantel. The electric light fixtures depend from the ceiling. There is a Roman table in the center, with a top of polished green

marble. The other furniture is, for the most part, covered with green damask. A green rug covers the hardwood floor.

The dining-room on the left is separated from the hall by square columns, with a wide opening in the center, supported by narrower openings on the sides, the lower part of which is filled in with the dado of the hall walls, with damasked panels above. There is a fine sense of openness here, the separation not being accomplished by a partition, but by what is practically a permanent screen open at the top. Low swinging doors are applied to the middle piers, but as these are mostly kept open they are not solid means of separation.

The dining-room is an apartment of really exquisite charm. It is bril-

liantly lighted, the windows, as in the hall, extending to the floor. The farther end has four, two in the end wall and one on each side wall, the whole group admitting a flood of light that is most agreeably arranged. The room is designed in the Louis XVI style, and no pains have been spared to make it as consistent as possible. The panelling of the dado and the other woodwork is finished with gray enamel paint. Above are great tapestry panels, chiefly representing wood scenes, in blues, greens, browns and yellows. A narrow cornice supports the plain ceiling, from the center of which depends an elaborate electric light fixture. This has, at the top, six bells of yellowish glass, while from the center depends a brightly jewelled globe. Separate switches permits the lighting of one or both or all



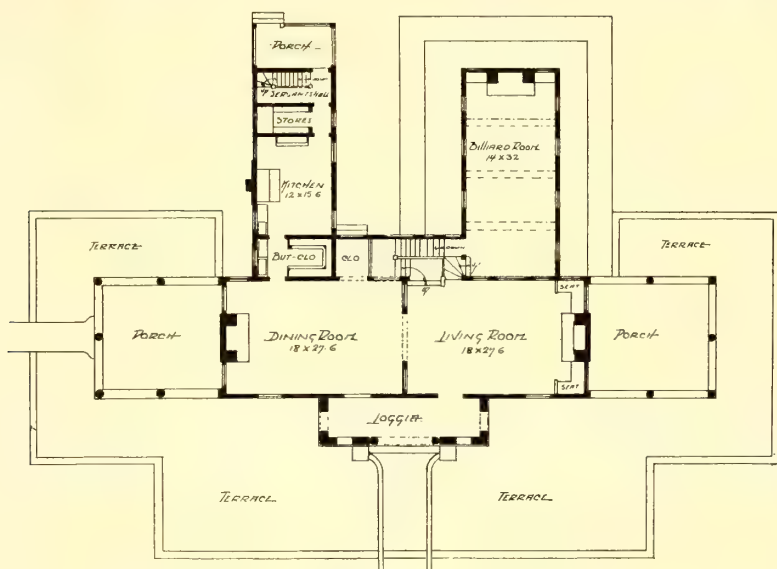
The interior of the entrance porch



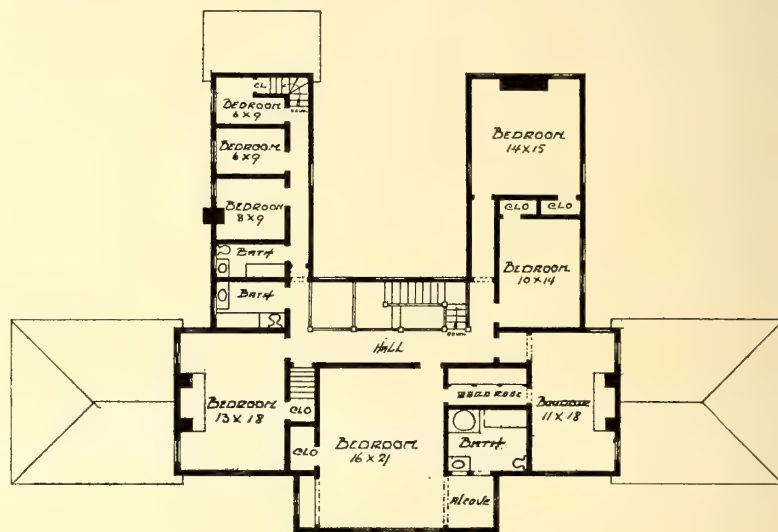
The interior of the living-porch



The exterior of the living-porch



First floor plan



Second floor plan

of these. The carpet is a deep plain blue. The furniture, which has been expressly manufactured for this room, is in gray enamel, with cane seats covered with blue velvet cushions, with small lambrequin-like back cushions, also in blue velvet. The dining table was not ready when the accompanying photograph was taken, but has since been put in place. It is circular in form, in gray enamelled wood like the chairs, and decorated, on the top, with a carved border. The mantel of imitation Caen stone is at the farther end of the room and is simply designed in the style of the apartment. The overmantel encloses a panel of tapestry. The fireplace is lined

with bluish white brick. The stairs which rise from the hall, also open into this room, and form a part of its enclosure. They mount to an open platform which is actually in the dining-room.

The stair wall is covered with a paper in two shades of yellow brown, a coloring admirably adapted to harmonize with the colors of the walls of the rooms that open into it, and at the same time quite cheerful enough to give light and color on its own account. The upper hall has the same covering, and here again is in agreeable contrast and harmony with the bedrooms which open into it.

On the opposite side of the hall, as you enter it, is a triple opening with square columns such



The billiard room



The living-room



Another view of the living-room, showing the staircase hall

as form the main feature of the separation between the dining-room and the hall. Here, however, they are completely open, save for a simple balustrade at the base. Before each column is a great gilt ecclesiastical candlestick, standing on a high pedestal. Approaching the railing one looks over and down upon the billiard-room.

The individuality that has distinguished the other rooms is here even more marked and pronounced. It is quite unlike the other apartments, yet although it opens into the hall, and is hence as one, in a measure with the dining-room, it is so entirely sequestered that the very striking character of its individuality is by no means in-harmonious nor, indeed, conspicuous.

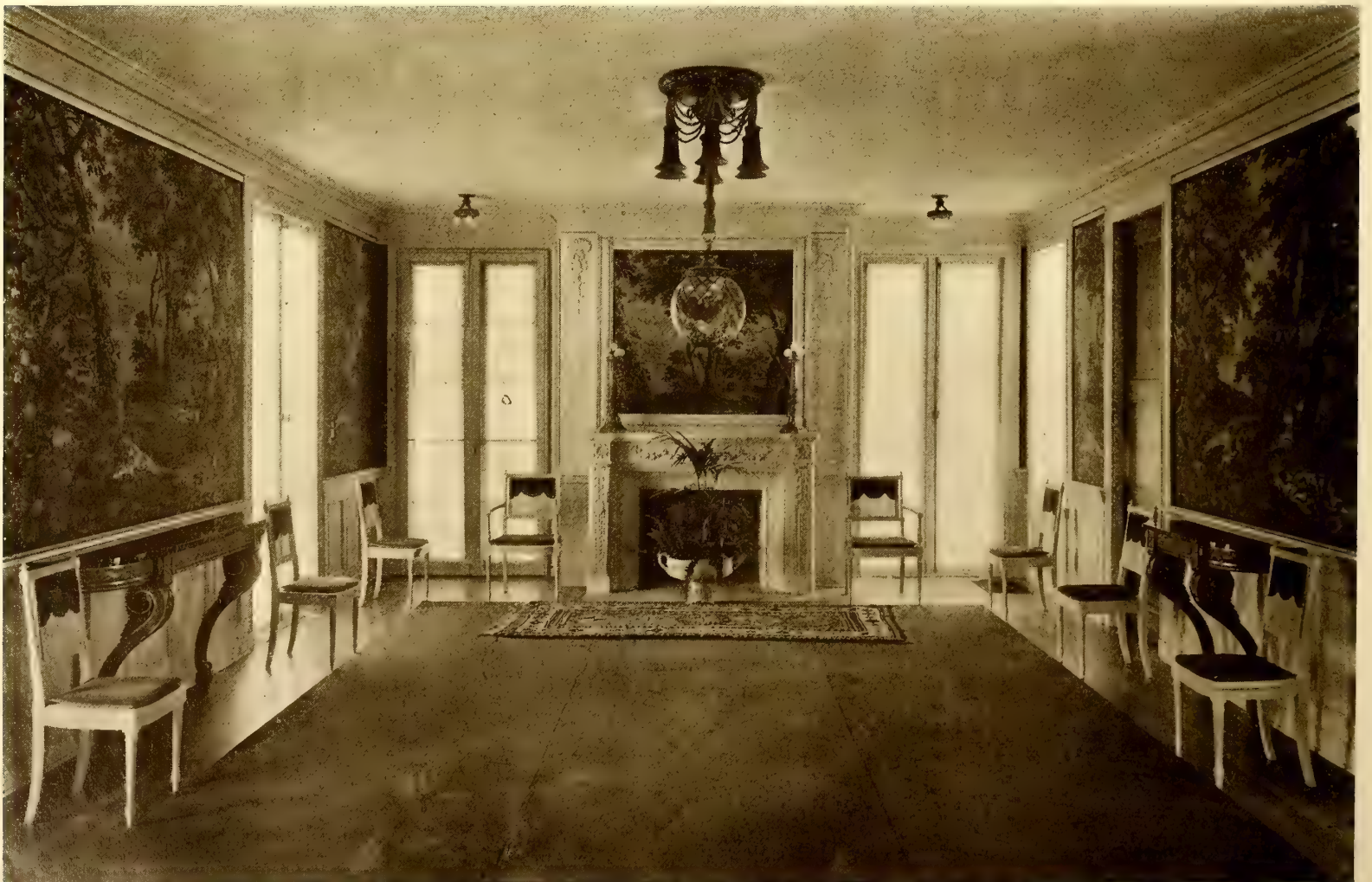
Although the contour of the exterior ground does not suggest it, nor for that matter, does the external architecture, since the tops of the windows are everywhere kept at the same level—the additional space being left below them—this room is much lower than the others, and is reached by a short flight of steps that descends near



The owner's bedroom—designed in the Louis XVI style

the main staircase. It is panelled in oak, with high plain wainscot, above which the walls are treated in rough cast. The ceiling is covered with oak boards, and is upheld by great beams and struts. The windows are encased within plain frames of oak, and have small lambrequins of red velvet and red shades. The carpet around the billiard-table is red, and the hardwood floor is stained green. At the farther end is the fireplace, a massive structure built up of yellow brown stones and with red brick

lining; a Greek relief is let into the upper part. On each side is an arched recess, with a built-in seat below a small window; a pair of Moose horns is fastened above each, and in the uppermost recess is a copper lantern. Two of these depend from the ceiling all being furnished with electric lights. Coupled lights beneath each of the brackets carrying the ceiling supports are contrived in the skull and horns of Rocky Mountain goats. An interesting room, strongly in its furnishings, and a most interesting place of retreat in a thoroughly interesting house.



The Louis XVI dining-room



Fig. 1—These Colonial candlesticks with shades complete cost \$1.00 each

Fig. 2—Another style of Colonial candlestick, equally effective, and cost 40 cents each.

Fig. 3—The decanter is an excellent copy of the old Colonial and cost \$1.10 each

Furnishing the Apartment

By Lillian Hamilton French

III—THE DINING-ROOM

THE ease with which a dining-room is furnished should pre-suppose its being always a satisfactory apartment. Many reasons contribute to this ease, since not only are the purposes of this room clearly defined, but that which is used in it may also be employed as parts of the decorative scheme. The aim of the householder, of course, should be to keep strictly to the dining-room's purpose, obtruding no other signs of occupation. The exigencies of living being what they are, however, even in a house, this room may often permit itself to be expanded so as to include other necessities. Children may read there, for example, or play about the table at night; or the father may reserve a special corner for his paper and cigars.

That which more than anything else contributes to the ugliness of the room is the choice of its various appointments. Red-bordered table linen is a horror; so is a china service with the same design as that seen on the washstands. So, too, are over-decorated sets of colored glass. Worst of all, is a sideboard showing a series of bordered napkins on which are displayed ordinary dishes, while the crowning touch of everything bad is a tumbler or silver cup holding teaspoons standing upright. The only proper place for small pieces of silver is in a drawer, well protected from dust.

It is not obligatory to have ugly things.

We may have to pay extravagantly for a silk hanging with special tones; and beds that are comfortable may make a drain on the purse. But a pretty table service is within reach of the most modest of

incomes. For this we must thank the manufacturers, who, in copying good glass models, have given us, for a mere song, that about which there need be no embarrassment, and which, indeed, in many cases is to be preferred. The candlesticks shown in Fig. 1 are of the old Colonial style, and cost, with shades complete, \$1 each; the candlesticks in Fig. 2, cost forty cents apiece. Four, then, may be had for \$1.60, and even on a table set out with Venetian water and wine glasses, they lend themselves agreeably. I prefer them to the Colonial candlesticks costing the same price, as shown in Fig. 1; because the twist in the stem gives a lovelier reflection. I have known them to be mistaken for heirlooms. The decanters (Fig. 3) cost \$1.10 each.

There is no possession which one may have which will give greater pleasure than a Roman altar light. It not only gives an air of refinement to the home, but it also serves its purpose in adding its brilliancy to all festive and joyous occasions. The Roman light shown in Fig. 4 cost \$6. Duplicates of this one can be purchased for the same price.

Sixty pieces of the Colonial glass also shown here (Fig. 6), including claret and wine glasses, are on sale for \$5.00.

Tumblers may be substituted for the goblets at the same price for the 60 pieces, or finger bowls, which are exceedingly pretty, but which separately cost 25 cents apiece. If one desires a thinner glass, more delicately modelled, called Optic, \$11.75 will buy 60 pieces. A slightly iridescent set is had for \$18.50. The pitcher in the illustration cost 40 cents, but there are others of different designs at the same price. The small pitcher and sugar bowl for fruit cost 70 cents. The choice of china is somewhat



Fig. 4—A Roman altar light costing \$6. A splendid ornament for a Christmas or festive occasion



Fig. 5—The Canton china cream pitcher cost 65 cents; the sugar bowl 90 cents, the coffee pot \$2.50, and the plates \$5.25 a dozen



Fig. 6—Sixty pieces of colonial glass like these, including wine, claret and champagne glasses, can be bought for \$5

more difficult, but only because the assortment is more varied and bewildering. The purchaser is advised to select standard models, as breakages are more easily replaced. The English willow ware, especially for breakfast and luncheon, is always lovely, and costs \$14.50 for 130 pieces. There is a Bavarian china, with dessert plates, costing \$3.50 a dozen, and \$7.50 for the cups.

Any white china with a light but plain gold or blue rim is charming. Pure white Wedgewood is enchanting. The prettiest table I know, is set out with this, everything matching to the candlesticks and centerpiece. With spring flowers on the table, and the peppermints made in the form of sweetpeas, the effect is unique. Such a set is expensive, a branched candlestick with its pretty figures costing alone \$12.50. Individually, I prefer, for those of limited possessions, the Canton china, which is good at all times. The dark blue looks well on either a bare table or the white of a tablecloth. Even when one buys the modern manufacture, there is always an air of inheritance about the table it adorns. The coffee pot shown in Fig. 5 cost \$2.50, the sugar bowl 90 cents, the cream pitcher 65 cents, the plates \$5.25 a dozen. This china, moreover, looks well at various angles, so that plates, as seen in the illustration, can be used against the walls, which is not the case with all china, certainly not with that which shows too much white.

The dining-room (Fig. 10) where this Canton is hung has a dark green burlap on the walls, to bring it into key with the adjoining parlor. And here, again, one can see tact in the

use of the Canton, since even against the dark green it is good. Thus over the low boy it is displayed on shelves which a carpenter put up and stained for \$4. The low boy cost \$30 in an antique shop. It will be noticed that it exactly fits the space between the doors, and so finishes that end of the room.

The proper filling of spaces is sometimes a problem. In this dining-room, for instance, the mantel-piece was not directly in the middle of the room, so that a strip of bare wall was left on one side. A mirror was therefore used, and with satisfactory results, for the flowers in front of it are repeated, and as the mirror directly faces the parlor door it also reflects certain objects in that room. One can see, for example, the flames of lighted candles repeated at night, and the effect is especially delightful. The mirror (Fig. 10) is without a frame, and held in place by small invisible tacks; its price was \$8.

Choice bits of china and Venetian glass are kept in a cabinet (Fig. 10) by the window. For this \$50 was paid in an antique shop. The shelves and sides are covered with velvet, though the more elaborate cabinets have plate glass shelves. Balancing this, on the other

side of the fireplace, is an old-fashioned bookcase and desk combined. This is also used for china, and anyone possessing such an object is recommended to apply it to this end, for the drawers underneath hold large tablecloths and napkins; the small drawers, the forks and spoons not in daily use. Bookcases like this may be had for \$75.

The sideboard, bought at an auction, cost \$50. Only a good model should be pur-



Fig. 7—A mahogany serving table of charming design



Fig. 8—A combined fireplace and china cabinet of good style.

chased, even if it be an imitation, but whatever the financial situation, the householder must avoid those oak monstrosities with upper shelves and silly compartments. Care must also be exercised in building up the spaces over the board. In this case a picture is hung, with old Venetian iron candlesticks, but a mirror might have taken its place. A word of caution is necessary just here. One must never mix china and glass on the sideboard. Silver and glass. Yes! Or all china, or all glass, but no conglomeration.

The great expense involved lies in the table and chairs, for which prices are constantly varying. This one (Fig. 10) cost \$11 twenty years ago, and can be stretched to seat sixteen people. When the manufacturer was asked for one like it, he threw up his hands in horror—then asked \$50! The chairs, though, can always be had for \$7 or \$8 apiece, and although not especially pretty, are not obtrusive. They are of mahogany, with leather seats.

In the second dining-room (Fig. 11) of like dimensions, the chairs are better. Imitations of them may be had from \$9 to \$12.50. The whole air of this dining-room shows great reserve, and represents with taste, a greater expenditure. It opens out into a parlor with the chintz furniture, shown in the preceding chapter, and, like it, is painted white. A gray-white

color, and the light, seen on it when flat, brought out quite a different tone from that seen when it fell straight. These seem minor considerations, but they are vital when harmony is to be attained. Special attention is drawn to the design of the lambrequin and curtains, which are of deep ruby red velvet, matching the carpet, and trimmed with silver braid.



Fig. 9—The plate shelves over the low-boy, on which Canton china is placed, cost \$4 to build by a local carpenter

striped paper covers the walls, which, while differentiating the two rooms, also brings them into harmony. And this is as it should be, violent contrast being the greatest of all sins in interior decoration. Things should blend; color-schemes merge one into another; transitions be made easy and delightful. A disregard of these laws is not confined, however, to those of modest means, and many a great house is consequently spoiled. But in an apartment one can never be too careful. One must study effects, and be scrupulous regarding fine details. As one who means to use plates in decoration must look at them from two points of view, so one must study a stuff, never buying so much as a chintz without looking at it in several ways; flat, as on a seat covering, then up against the walls. After that, one must see how it looks in folds, as when looped back. Only yesterday I saw a pretty chintz sample which a bride was considering, and decided her against its purchase because the folds made it seem heavy in



Fig. 10—The corner cabinet contains rare old pieces of china and glass. The plain mirror over the fireplace gives depth to the room



Fig. 11—A charming dining-room with gray white striped paper on the walls and deep ruby velvet curtains at the windows

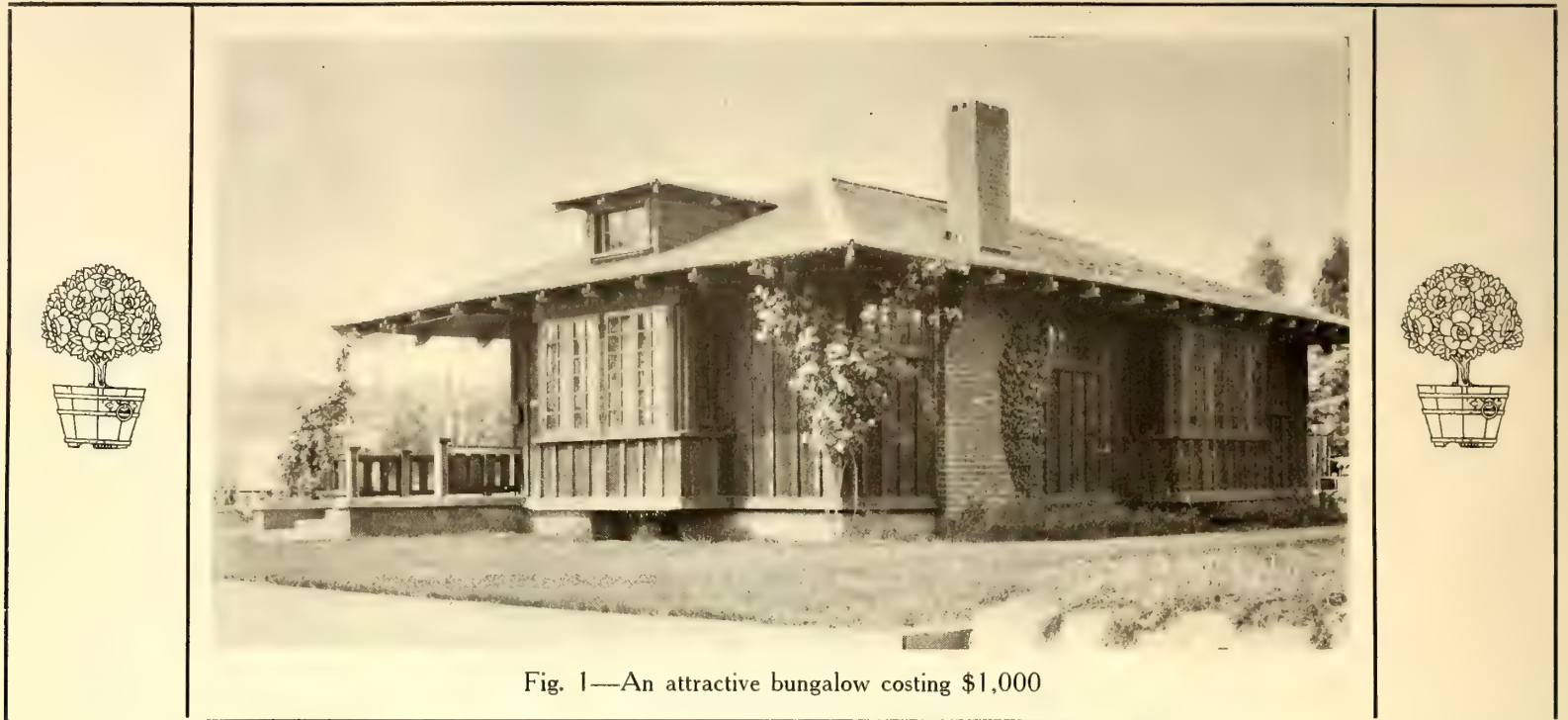


Fig. 1—An attractive bungalow costing \$1,000

California Bungalows Costing from One Thousand Dollars Upwards

By Helen Lukens Gaut



FEW inexpensive houses can boast of more attractive features than the little bungalows illustrated in this article. The one presented at the top of this page was designed by its owner, Herbert Carr, Esq., and built at Pasadena, California, for the sum of \$1,000. It is a simple little bungalow, built in a simple manner but with an artistic execution. The foundation is built of rough gray cement, while the superstructure is of frame, with 1x2 rough redwood boards placed upright on the studding, the joints of which are covered with three-inch battens. No oil or stain has been used on the exterior of the building, for it has been left to weather finish, the general effect being that of rustic weathered sidings. The overhanging roof is shingled and stained a dull green color. This roof has a four-foot extension overhanging the entire building and forming a covering for the groups of latticed windows, which project three feet beyond the main walls. The porches have floors laid with cement. The interior arrangement is excellent. The first floor (Figure 2) contains a living-room, dining-room, kitchen, bedroom and bath. The interior is most attractive, for the living and dining-rooms are practically one, the only separation being two square pillars rising from the floor to the ceiling and provided with a short rail between the pillars and the sides of the room, thus giving the impression of space, immediately upon entering the living-room.

The ceilings are boarded and beamed, while the walls are covered with canvas. A picture mold divides the height of the room. The wall space below the molding is given a coat of paint in a warm brown tone, while that above is painted a canary yellow. Painted canvas makes

a cheap wall covering, is sanitary, and is preferable to burlap, which catches and holds the dust. The entire woodwork is stained and finished in a soft brown color. The living-room has a large open fireplace built of brick, with a mantel-shelf on which is inscribed the following motto: "Love—Laughter—Work." On either side of the fireplace are bookcases built in, with deep drawers placed at the bottom of the shelves. Small lighted windows are built in over the bookcases. The window seats in the bay windows in the living and dining-rooms are partitioned into two divisions, each one of which is 2x4 feet, and two feet deep. These are excellent economizers of space, as they can be utilized for storage. The dining-room has a built-in buffet with a convenient slide opening into the kitchen. The bedroom has a similar bay window, fitted the same as the one in the living-room, and also a large clothes closet. The ceiling is finished with pine boards and beams left in their natural color. The walls are covered with canvas, and are painted a pale blue. The bathroom is furnished with porcelain fixtures, with exposed plumbing. A screened porch at the rear of the house forms a laundry, in which are placed two laundry tubs.

The contract for the bungalow was as follows:

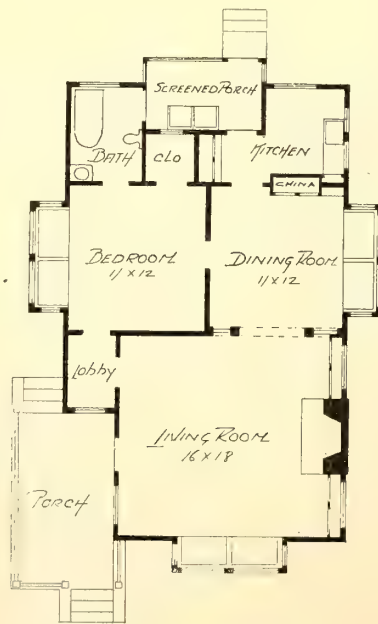


Fig. 2—First floor plan

Fireplace, cement work	\$ 74.65
Plumbing	155.00
Hardware	20.00
Canvas	22.15
Paint and stain for interior and roof	20.05
Lumber	420.00
Labor	288.15
Total	\$1,000.00

The bungalow shown in Figures 3 and 4 was also built at Pasadena, California, for G. S. Hinckley, Esq. This is particularly an interesting bungalow, with its lean-to roofs sloping down in a graceful manner over the living-porch, which has massive concrete columns supporting the roof. The underpinning and the foundation of the porch are built of brick. The porch floor is laid with red Welsh tile, 8x8 inches in size, with an outer edge of red brickwork laid in a herring-bone fashion. The entire building is covered with clapboards on the exterior walls, and the roof is covered with shingles, both of which are stained a dark brown color. The main floor of the house contains a living-room entered from the living-porch, a dining-room and kitchen. Each is furnished in a most artistic manner. The large butler's pantry between the dining-room and kitchen is complete with drawers, dressers and cupboards. The kitchen is designed in what is called a "buffet" kitchen. There are no pot closets or storage closets. Counters are built around the room on a level with the sink, under which there are constructed cupboards and drawers. The



Fig. 3—An attractive bungalow with gray cement columns and brown stained walls and roofs

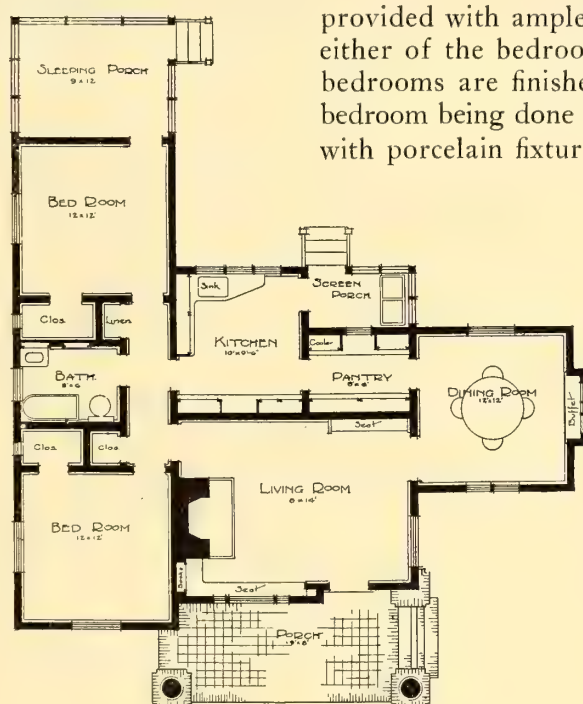


Fig. 4—First floor plan

provided with ample closets, and a bathroom reached from either of the bedrooms through a small passageway. The bedrooms are finished in a harmonious color scheme, each bedroom being done in one tone. The bathroom is furnished with porcelain fixtures and exposed nickle-plated plumbing.

The house shown in Figures 5 and 6 is that of a summer camp built for William Stanton at "Squirrel Inn," San Bernardino Mountains, Southern California. It is built of logs carefully hewn on their side, so as to lay flat on top of one another. The gable ends are covered with shingles left rough as they came from the mill.

There is a piazza extending across the front of the building and returning on one side. The first floor contains a large living-room, which is provided with a large open fireplace. This living-room is used for dining. There are also two bedrooms and a bathroom on



Fig. 5—A bungalow of the Swiss Chalet type

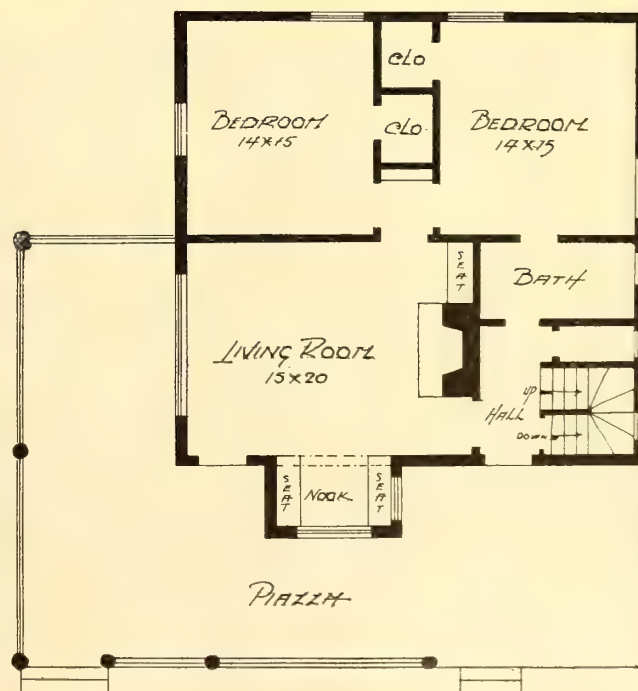


Fig. 6—First floor plan

this floor. The kitchen and its dependencies are built in the basement, which is on the level of the grade of the land made possible by the slope of the hillside upon which it is built.

The house shown in Figures 7, 8, 9 and 10 was built for Miss Ranney, at Pasadena, California, from the designs of Greene & Greene, architects, of the same place. This house, though built within the last three years, affords the interesting impression of being old. The weathered redwood shingles covering the exterior walls and the rough redwood timbers supporting the wide eaves, as well as the overlapping upper story, give this effect, and, in addition, the type of architecture seems to belong to some other country and time.

There is about it a suggestion of old Swiss, also an intimation of Japan. Yet in reality it is an individual type, a house with a personality, and, because it is "different," it is fascinating.

The entire exterior scheme of construction is rustic. The house is approached from the street, by steps and walk of red brick. The wall of the front terrace is of the



Fig. 7—The brick walled terrace and overhanging roof is the chief characteristic of this bungalow

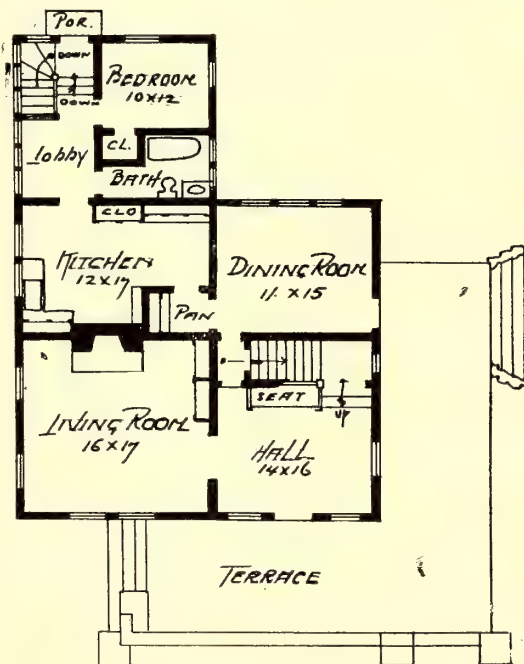


Fig. 8—First floor plan

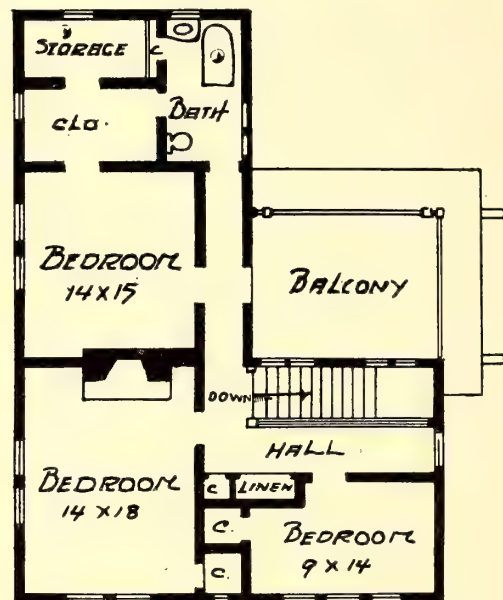


Fig. 9—Second floor plan



Fig. 10—The living-room has a batten wainscoting, bookcases built in, and a large fireplace built of brick and cement

roughest klinker brick, with English ivy climbing over. Neither paint nor oil have been used on the exterior, excepting on the cave troughs, and the timbered edges of the eaves, which have been painted white. The balance of the house is subdued and dignified in color, the rich browns of the redwood shading almost to black, and the red of the bricks blending admirably. On the

north side of the house is a spacious outdoor living-room, with pergola roof and side screens of fragrant rose vines. This porch is off the street, and is secluded and restful. On the south side of the house is a cleverly arranged pergola, with a slatted screen, designed to hide the kitchen

garden, the garbage cans, the clothes line, and other unsightly but necessary articles. The interior is not unlike that of a bungalow. The rooms are large, while the woodwork is all built on straight, craftsman-like lines. A delightful feature of the house is a large sleeping-porch. The many windows make it light and bright, and the absolute simplicity of its finish and furnishings make house-keeping a delight.



Fig. 1—The entrance to the formal garden photographed nine months after planting

American Homes and Gardens' Garden Competition

The Fourth Prize Garden

Won by Mrs. Anna H. Conduct, of Essex Fells, N. J.



THREE and a half years ago, I knew nothing about flowers, except to have a few palms and ferns about my home in winter, and a bed of geraniums or coleus on the lawn in summer. Because of poor health, the doctor advised an out-of-door life. At this time a friend lent me Mrs.

Ely's book, "A Woman's Hardy Garden." On reading it, I was filled with enthusiasm to have a flower garden, especially as she remarked that the best success in flower culture was obtained by people in middle life. Children are then grown up, family cares lighter, and society less alluring. Surely then I was fitted for the work! I would strive for "masses of color" and "succession of bloom." Not one plant of a kind, but a hundred of each, all of my own raising; that should be my ambition. I little realized at that time the great amount of work

ahead of me before I could achieve my object. But I have, in this my fourth summer, succeeded. For I have not only greatly improved my health, but I have also a fine kitchen garden, and a formal garden of which I am quite proud. Flowers are everywhere, of fifty different kinds, in beds close up to the house, along the driveway, and edging the walks in the vegetable garden. I can point to 2,000 perennials, 2,000 asters, and 500 other annuals, raised myself from seed. Three and a half years ago, owing to my ignorance of the best flower seeds for a beginner to work with, I decided to buy a "collection of annual flower seeds," containing twenty-five packets, for \$1; also a "suburban garden collection of vegetable seeds" for \$2.50. With these I began my work. Garden magazines and books were read, directions followed as nearly as possible; but the results of the first season's endeavors were anything but satisfactory. Seeds planted too deep failed to appear

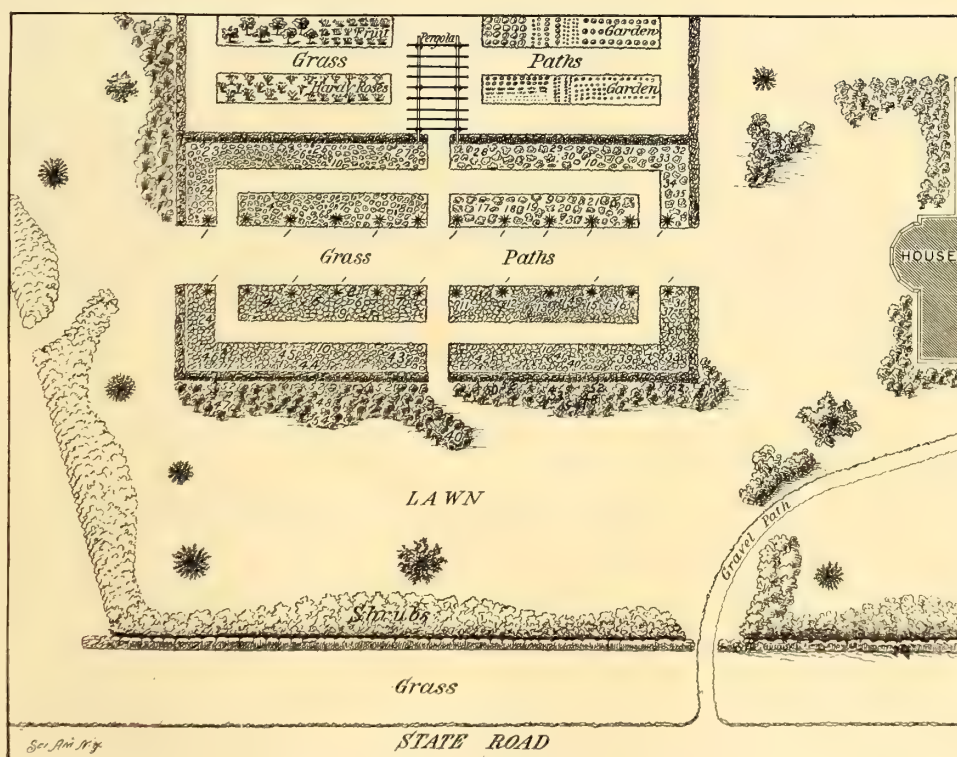


Fig. 2—The plan of Mrs. Conduct's garden

above ground. Some died from lack of water, others from too much. But the plants that did live encouraged me to redouble my efforts the following year.

Those annuals that proved satisfactory at first were planted again the second year, and many new ones tried, thus doubling the number of plants. Fewer failures, too, were met with. Reading in a magazine of a woman's first experience with a cold frame, filled me with desire to do likewise. Buying a "collection of perennial flower seeds," I planted them in August, as the catalogues say. Of course, I had all kinds of tribulations before I learned how to manage the cold frames so that my seeds would not damp off or grow too spindling. But November found me with several hundred little plants, which remained in the

under glass when frost comes. My special pride is the formal garden, 68x90 feet, containing 3,000 plants and bulbs, and also during June and July 124 feet of sweet peas. This garden is less than a year old, for where it now stands, last year was only a grass lawn, with one long bed of perennials across the rear. The pergola was not built until this May, two months before Figures 3 and 7 were taken. So my garden grew, not in one night, like "Jack's Beanstalk," but in one season. It is my first real flower garden, for my plants the three previous summers were scattered along through the kitchen garden, edging the gravel walks. The diagram of the formal garden (Figure 2) is drawn to a scale of eight feet to one inch, and gives the position of the plants used, and size of



Fig. 3—The twin beds showing the aster, phlox and golden glow in bloom, photographed September 6th

frames all winter. When I closed my country home, about Thanksgiving, the cold frames were closed also.

With great anxiety did I take my first peep under the glass, when the outer coverings were removed on April first. My delight was unbounded to find about half of them in good condition. There are now ten cold frames in use on my place, but I have decided that it is better to plant seeds of perennials in May or June in open ground, in seed beds; then by fall most of them are large and strong enough to be put into the places where they are to bloom, and the roots protected by manure. Only those seedlings deemed too small and frail to withstand the alternate thawing and freezing in open ground are put

beds. A front view showing twin beds and pergola entrance, as seen from the street, is shown in Figure 3. A closer view of a portion of a twin bed, with sweet williams, foxgloves and hollyhocks in bloom July eighth, is given in Figure 7. The illustrations 5, 6, 7 and 8 were taken inside of the formal garden in July and August, and show beds of flowers with grass walks.

Ever since beginning the gardening, one of my aims has been to see continuous bloom among the flowers. This has been much more difficult to obtain than I had at first supposed, because the flowering period of most plants is only from two to four weeks. The twin beds, 11x33 feet, each side of the pergola, contain 1,000 plants and bulbs.

Eight different kinds of flowers, planted in rows, together with 2,000 crocus in the lawn, have given continuous bloom since March 25th. The flowers are crocus, tulip, sweet william, foxgloves, hollyhock, phlox, golden glow, cosmos and asters. The time of bloom, height, color and number of each used in this space 11x66 feet may be found in the following table:

TABLE FOR CONTINUOUS BLOOM.
Beds 11x66 feet.

Time Bloom	Plants	Name	Rows	Color	Height
Aug. 20-Sept. 10.	176	Golden Glow...	3	Yellow	8 ft.
June 15-Aug. 1.	88	Hollyhocks ...	2	Pink	
July 15-Oct. 1.	80	Early Cosmos..	1	White	6 "



Fig. 4—The garden ten months old, showing the physotegia bed, photographed August 6th



Fig. 6—A portion of a thirty-foot bed of continuous blooms from April 15th until frost; tulips, columbines, larkspur and asters

TWO-FOOT GRASS WALK FOR SPRAYING.

Time Bloom	Plants	Name	Rows	Color	Height
Aug. 1-Sept. 15.	175	Hardy Phlox...	2	Pink	
May 15-July 15.	64	Foxgloves ...	1	White	4-6 ft.
May 15-July 15.	100	Sweet William..	1	Red	
April 15-May 15.	250	Early Tulips ..	1	Red	1 "
Aug. 15-Sept. 15.	80	Asters	1	White	2 "

1013

Mch. 25-Apr. 25...2,000 crocus planted in lawn.

Illustration Figure 6 shows a portion of this larkspur bed, 5-32 feet, alongside of the driveway. It contains 621 plants and bulbs, and also has continuous bloom from April 15th until frost, with four kinds of flowers.

April 15-May 15.	250	Tulips, "Kaiserkroon"
May 15-June 15.	75	Columbines (Aquilegia)
June 1-Oct. 1.	152	Hardy Larkspur (Delphinium)
Aug. 15-Sept. 15.	144	Asters, "Lavender Gem"

621

The tulips, six inches apart, in one row, are all around the outside edge of the bed, and were planted in October. This June their places were filled with asters for September flowering. Columbines, single and double, and of all colors,



Fig. 5—Side view in formal garden showing grass walks and flower beds, photographed July 8th



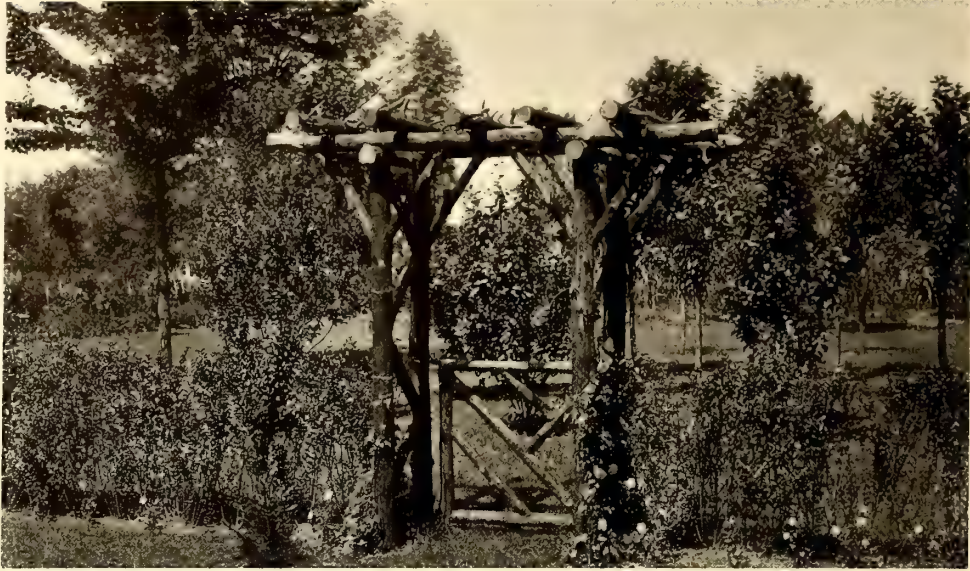
Fig. 7—A view of the twin beds showing sweet william in front, fox glove next and hollyhocks in the rear, photographed July 8th

form the second row entirely around the bed; while the tall, hardy larkspurs, also planted last fall, and growing to the height of five feet, fill the long center with a mass of blue bloom during June and July. By cutting off each stalk close to the ground as soon as the flower fades, loosening up the soil about the roots, and putting a handful of manure about each plant, the larkspurs are helped to send up fresh stalks half the height of the first ones, each stalk bearing flowers, smaller in size, but large enough to keep the bed looking well up to frost. This fall I intend to plant two dozen lililum speciosum one foot apart down the

middle. They bloom from the middle of August for a month, while the larkspurs are small, and I think will add to the beauty of the bed.

The right time to make a flower garden is in the fall. Perennials should be planted in October, to make

Fig. 8—The gateway and privet hedge, photographed three months after planting



Spencer hybrids begin. The two best "fillers" for vacant places to keep up continuous bloom in the garden are asters and Shirley poppies. Seed of the Shirley poppies, scattered on the top of beds in November, will bloom very profusely during May and June.



early growth, also tulips and lilies. Peonies and iris, if planted in spring, will not bloom for a year. Trenches for sweet peas should have manure forked into them in fall, and the seed planted by April 1st. "Earliest of all" sweet peas give fine bloom for two weeks before

Fig. 9—The gladiola beds photographed August 6th
Fig. 10—The asters in bloom, photographed September 6th

When they die, the seed is saved, the plants pulled up, and the places filled with asters for August and September bloom. Oriental poppies, after the foliage turns brown, I cut down to the ground, and plant "Little Brownie" marigolds in profusion among the poppy roots.

Historic Mansions of the Rappahannock River

By Edith Dabney

"Kenmore"

The Home of Betty Washington, now in Possession of the Howard Family



FROM the picturesque hills that form the Palisades of the Rappahannock River, the historic town of Fredericksburg is viewed in its luxurious setting of rolling meadow and forest lands, lying as some charming jewel endowed by nature and admired by man. Here, in a quiet, secluded spot, a fitting monument for history and for legend, stands "Kenmore," the rare old home built by Col. Fielding Lewis for Betty Washington, the sister of George Washington, whom he took there as his bride.

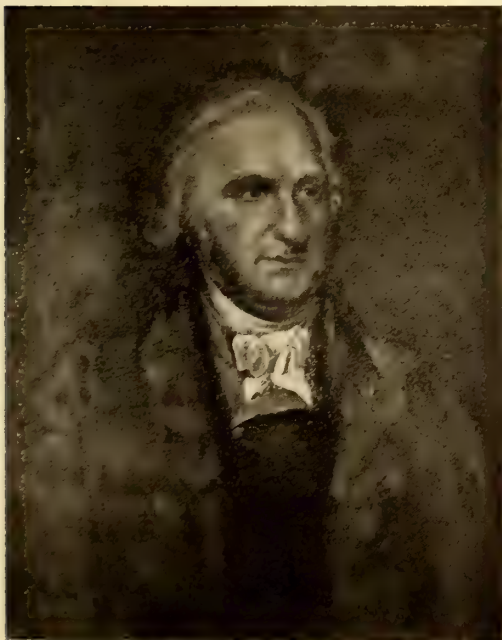
The Kenmore estate is not large, as it includes only a few acres, but these, placed away and apart from the rest of the town, give an effect of ease and space unwarranted by the mere area. The grounds are partially enclosed by a heavy brick wall of English appearance, to which ivy clings with grim tenacity, and the mosses of ages have mellowed in tone; grounds where great trees stand sentinel around the mansion; oaks, maples and poplars; firs and sycamores, surviving the forest monarchs that have succumbed to the wash of time and storm.

The brick mansion built in 1749 might tell a tale of romance and history blended, could the staunch old walls but speak, for this was the house where Washington often found needed rest after tireless duty, and where his mother, "The Rose of Epping Forest," lived to the last. The visiting stranger pauses always almost directly in front of "Kenmore" and gazes reverently at a granite obelisk bearing the simple inscription, "Mary, the Mother of Washington," beneath which lies the quiet sleeper who blessed her country as no other woman can. In this great house, too,

was born Major Lawrence Lewis, who married beautiful Nellie Custis.

"Kenmore" played its first part in history in the French and Indian Wars of 1755-57, being at that time a rendezvous for recruits and headquarters for Washington, then a colonel in the English army. Twenty years later, when America was in the throes of her greatest struggle, General Washington many times sought his sister's fireside for a council of war or a breath of home. During the Civil War the dwelling served as a barracks for Federal Sharpshooters, and bears to-day the marks and scars of the shells which struck it during those troublous times. Col. Lewis must have had in view a lengthy existence for the house presented to his little bride, for its thick walls and massive foundations have weathered three bitter wars. Being desirous of having this home made one of the handsomest in all Virginia, the early builder spared neither time nor trouble nor expense to attain that end, and the remarkable material and workmanship bespeak both an architectural triumph and a practical forethought.

In color, the mansion is of the true Colonial buff, with the framework of the doors and arched window facings white, which contrast restfully with the time-stained stone steps that have borne the footsteps of one hundred and sixty years of joy and sorrow and of peace and war. The covered corridor or arcade forming a left wing to the building presents rather original lines, having served no particular purpose beyond proving a decorative relief from the kitchen, which is placed in the rear. But under those graceful archways, perhaps, Betty Lewis often sat with a bit of tatting or old-time sampler. Here, too, fancy makes



Col. John Eager Howard



Mary Washington



General Seth Barton



The dining-room



"Kenmore," the home



The drawing-room



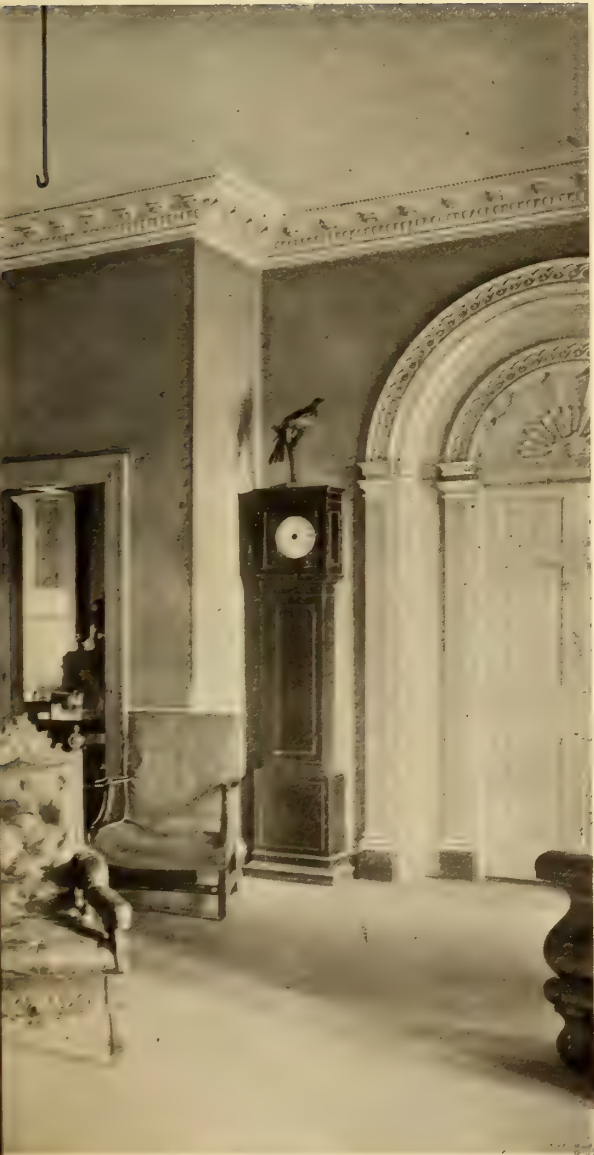
The cer



Betty Washington



The entrance hall and stairway



hall



The library



The dining-room



"Kenmore," the home of Betty Washington



The entrance hall and stairway



The drawing-room



The central hall



The library

a picture of the greatest man of a great country pacing the floor of the quaint arcade, frowning over grave thoughts, or reveling in the air of peace and comfort.

The unobstructive entrance at the right of the dwelling is thoroughly Colonial. The main entrance door of heavy oak is adorned with an antique brass knocker, and opens immediately into the central hallway, which extends the depth of the house, joining and becoming a part of the library in the rear, and thus rendering the exit to that portico direct from the library. A very charming idea, and one well executed.

The paneling and wainscoting of the graceful stairway are painted white, as are the balustrades, and are in keeping with the rest of the hall. The doorway shows pilasters as decoration, as well as a semi-circular cornice, which give an extremely good effect, while the fine carving on the cornice proper is far beyond the usual. An historic marquetry table stands under the old-fashioned mirror, and a grandfather's clock and rare Jacobean chairs render the hall furniture harmonious on the whole and artistic in detail.

The greatest and most unusual feature of "Kenmore" lies undoubtedly in its ceiling decorations, wonderful marvels of untiring care and faultless execution. The plaster designs are said to have been executed by a British prisoner held during the Revolution, and of the graceful clusters of flowers, baskets of fruits and horns of plenty, more than twenty thousand separate and distinct pieces are clearly visible.

The library ceiling is one of the most interesting in the mansion, while the plaster decoration over the mantel was designed by General Washington, and portrays several of Æsop's fables, conspicuously that of the "Fox and Crow." The mantel itself and pediments are of wood beautifully carved. The great, arched doorway of this hall-library, with double pilasters and superbly carved frame, is an exquisite bit of workmanship. Near by stands the quaint old clock which belonged to Mary Washington, still monotonously telling the passing of time. The walls, which might otherwise be called too stiff and severe, are lent distinction and charm by the beautiful portraits which hang thereon. The furniture of this Eighteenth Century room is of mahogany and rosewood, the chief ornament a bronze on the center table, which is one of Barye's famous pieces.

The drawing-room at the right of the hall, adjoining the library, holds much of historic interest, for here have always gathered famous men and women. The walls show

many choice portraits, among which is a noted one of Col. John Eager Howard, who was voted a medal by Congress for bravery in the battle of Cowpens. Here again are seen the wonderful ceiling and mantel decorations. Still true to the Colonial period, this room holds neither superfluous furnishings nor ornaments, the most conspicuous among the art objects being the marble busts from the hand of the far-famed Powers, and which are placed in the chimney alcoves.

Crossing the hall at the front of the house, the dining-room is reached, and the old-fashioned furniture and family plate, which abound in profusion in this historic room, give rise to envy in the heart of the uninitiated as well as the connoisseur. The rare Coleport and Willow ware, the Canton china and Wedgewood plates, have stood for years in the corner cupboards, and have graced many notable banquet tables; a glimpse of the past in a restless to-day.

Throughout the house are evidences of the wealth and culture of the Eighteenth Century architect-builder, aided and augmented by the work of the generations who have lived and succeeded one another in the beautiful old mansion.

After "Kenmore" passed out of the Lewis family, the estate was owned successively by the Gordons and the Bartons, a curious fact being that Lieut. Seth Barton, a gallant young officer in the Revolution, who claimed Rhode Island as his birthplace, had two sons, General and Judge Barton, who, living in "Kenmore," gave their aid to the Confederate cause, proving the walls and roof of the great house to have sheltered many men of many allegiances.

About twenty-five years ago the property was bought by Mr. W. P. Howard, a grand-nephew of Francis Scott Key, of "Star-Spangled Banner" fame. When the fine old mansion came into the possession of Mr. Howard, it was in very bad repair, never having recovered from the effects of the Civil War, the scars of which show only too plainly. The grounds, which are now so charmingly restful, were then used as a common, without any regard to the damage inflicted there, or upon its surroundings.

But bright days have come once more to "Kenmore," and the historic mansion, in its setting of grand old trees and velvet greensward, harmonizes with the springtime verdure, in contrast with the winter's snow. With the first bird song of early spring, narcissi, followed by daffodils, cluster over the lawn in great splashes of gold, as if Mary Washington's cherished blossoms were blooming in their glory for this generation in honor of Auld Lang Syne.



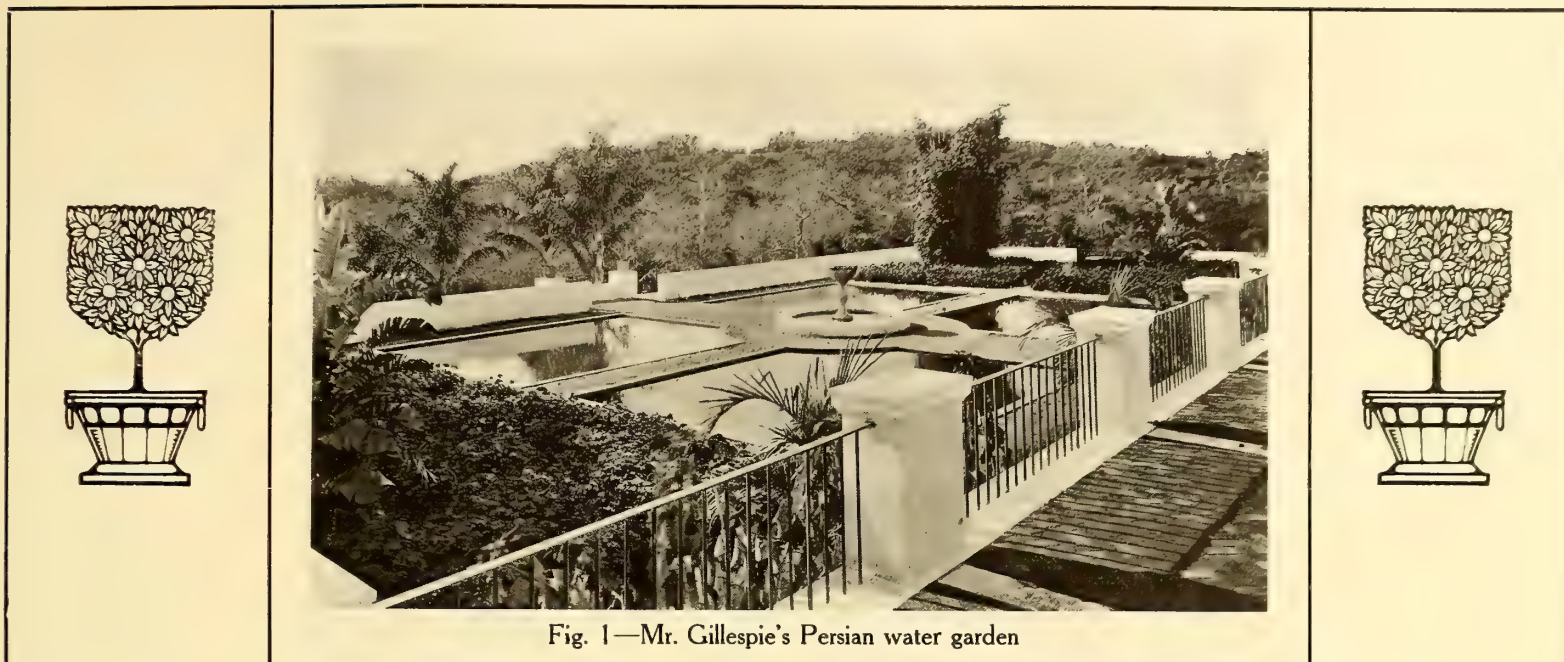


Fig. 1—Mr. Gillespie's Persian water garden

Water Gardens of California

By Kate Greenleaf Locke



HERE is, near Santa Barbara, California, a snow-white villa set high upon a hill. Upon its pink-tiled roof the sun shines in unchecked brilliance, and when one steps out from the cool shadows of the house onto a broad-mosaiced terrace (Fig. 1) the blaze of light is dazzling. That this momentary effect is followed immediately by a sense of

serene coolness and repose, is due to still pools of water which mirror quietly the blue ether, as they lie facing the sky and absorbing its beauty.

The top of the mountain has been smoothed away and upon it is set the villa and these basins. Around them waves the feathery green of the tree-tops of tall palms, giant-bamboo and bananas; and from the white balustrade one looks across an ocean of green to the blue



Fig. 2—Dr. Rudolph Shiffman's Italian garden with pool and Japanese fountain

Pacific and the island of Anna Cappa.

Thus the color picture is exquisite, for the water reflects a broad surface of charming blue, besides the white and green of its surroundings, and it is so clean, so washed of all that worries and obtrudes unpleasantly that one is tempted to sit and dream for an indefinite time beside these silent pools. Seeing them, it is easy to understand the worship of water-gardens, that obtains in torrid countries. Below

this plateau of pools the side of the mountain is terraced to its foot and the stone stairway ends at each terrace to develop a pool or fountain.

Italian cypresses guard the steep descent, and clipped hedges of cypress form a wall of green which marks the line of the terrace, while pink and white and yellow water lilies float on these lower sheets of water, as pictured in Fig. 7.



Fig. 3—A novel feature of Mr. Eaton's water garden is the floating tea-house built for the small lake in the center of the garden

On another slope of the hill where the descent is more gradual, Mr. Gillespie, the owner of these gardens, has obtained a distinctly different effect. Here the "precious sparkling fluid" slips down the hillside through a narrow stone channel, which is laid in the center of a broad mosaiced brick pavement. The slope is gentle and the water glides over its stone bed in a never-ceasing flow which charms the eye and the senses. On the brow of the hill at the head

of the walk, stands a white-columned pergola (Fig. 6), and a curved stone bench invites one to rest beneath the rose vines that shade it. Below the hill at the other end of the pavement the water finds vent in a fountain, where it pours through the mouth of a great lion's head.

The charm of a single shining thread of water slipping noiselessly down the middle of a broad flat pavement is

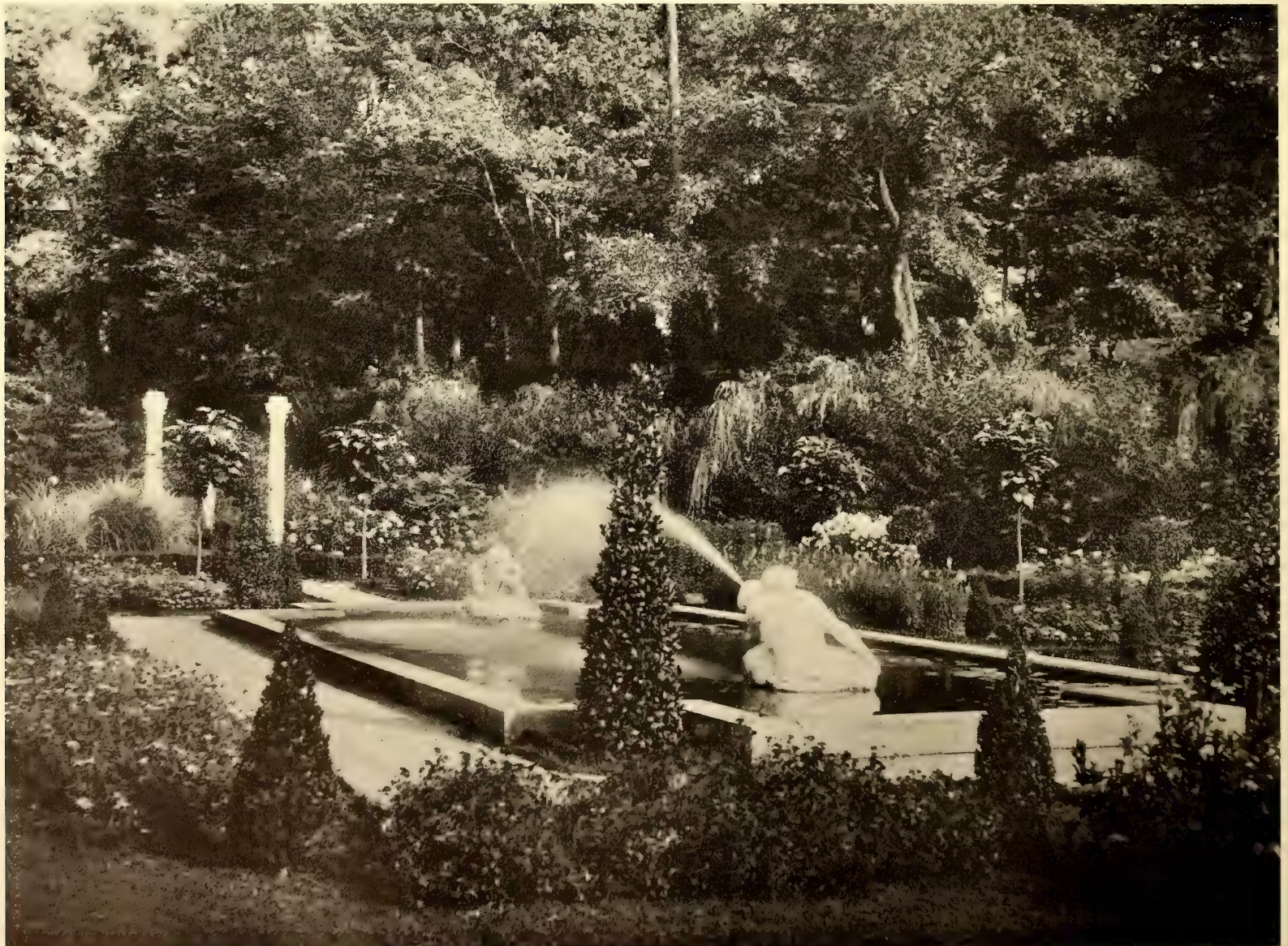


Fig. 4—The fountain in Mr. Canfield's water garden

peculiar, but it is very distinct, and Mr. Gillespie has enhanced it by planting close to the sides of the pavement a wall of green in clipped foliage. He admits that the idea is not original, having seen the same effect produced in a garden in the sad-fated island of Martinique many years ago.

It is strange that in this age when we are so prone to lay waste our powers, there should develop a sudden taste for this most delicate and poetical phase of gardening among the people who are building beautiful homes.

One has but to look at the illustration of Mr. Canfield's garden (Fig. 4) to imagine nymphs, nereids and naiads in the deep shadows of the trees. The Tritons blowing their conch shells of spray in the fountain, are given a setting in the surrounding trees, in the mingling of marble with



Fig. 5—The huge leafed lotus of the Nile

flowers and foliage, which make them appear perfectly at home; if there is an intruder in this sylvan spot it is not the Deity, who has been placed here to guard and give it character, but the visitor who is out of tune with its classic beauty. The man who conjures from a bit of rolling ground such an effect as has been secured here, surely combines the feeling of the painter, the sculptor and the poet with a deep and passionate understanding of nature's necromancing possibilities. To him her dim shades must be haunted by woodland creatures, amongst his flowers Proserpine might wander and Aphrodite be tempted to bathe in his pool.

This pool is the central point of interest in such a garden and the planting of the trees and shrubbery and the surrounding flowers which will be reflected in it, should be



Fig. 6—At the head of the walk, with a stream flowing through it, stands a white columned pergola

controlled by the position of the basin. When a fountain is the center from which radiate shady paths and sun-flecked vistas, their charm is doubled and their excuse for being is multiplied a hundred fold.

One of the most charming of all of the possibilities of a water-garden, is demonstrated in the one devised by Mr. Charles Frederick Eaton, on his place at Montecito, as shown in Fig. 3.

On a small artificial lake he has built a pavillion boat.

This is an exquisite little floating tea-room over which vines and blossoms clamber. It is manipulated by means of a secret cable under the water which sends it gliding among the water lilies in any given direction; here the hostess of *Riso Rivo* ("Laughing Rivulet") sits enthroned beside her tea-table while her guests occupy the scarlet cushioned seats by the rail: and with music and tea-drinking they are wafted as by a gentle breeze about the lake. The real excuse for this miniature lake is, that from the prominent place on the hill-top that it occupies, an apparently illimitable view of the ocean is obtained, with the Santa Barbara Isles in the foreground. When seen from the protecting shade of enormous live-oak trees, their twisted branches interlacing overhead, and over the tops of groves, of palms, olives, and other semi-tropical growth, the blue Pacific sparkling in the sunlight is entrancingly bewitching.

From the earth-filled boxes that are about the base of the pavillion, spring vines that flower and foliate at all seasons of the year, and in the wistaria season, from its roof of yellow thatch hang white and purple clusters of blossoms so thickly as to clothe



Fig. 7—The terrace and pool in Mr. Gillespie's Persian garden

it with a wonderful beauty.

Papyrus, and all kinds of Egyptian water grasses flourish on this lake, together with the huge leaved lotus of the Nile (Fig. 5); brilliant birds are often attracted to it in their passage through this portion of the world, and the pathway of the little pleasure boat among the flowers and floating plants is one of enchantment.

In Mr. Borden's villa at Alhambra, the owner has secured this enchantment within doors, for his house is

built in Pompeian style about an open inner court, as shown in Fig. 8.

The space enclosed by the fluted columns which uphold the roof is given over completely to a luxuriant garden of water plants, and it can be readily imagined that the domestic life which is carried on about this lovely central garden spot would be tintured by its unique charm.

The sunken garden of the modern Italian villa depends for its chief interest on the method of using the waters for embellishments and beautification.

A marble tank in the open sunshine may not possess quite the charm of the sequestered pool surrounded by bending trees, where shy wild creatures stop to drink, but without it the most elaborately planned garden would appear lifeless. No garden is complete without the water feature—in fountain, in running stream, in cascade or still pool; birds and butterflies, fountains and rivulets, are in a garden the needed touches of life, and no matter how beautiful the picture, it is dead without them; dead without that contrast which animation gives to the quiet and placidity of the pool.



Fig. 8—The patio in Mr. Borden's villa at Alhambra, California

Trimming Street and Lawn Trees

By E. P. Powell



THE care of street and lawn trees is an art by itself; although an art that is easily acquired by every home maker. Not anything like enough attention has been paid to this sort of work. Our street trees all over the country are simply stuck into the ground, and left to shift for themselves.

The result is that the less said about them the better. Those villages which are best shaded are, after all, those that have been most neglected; for where any attention has been given, it has been turned over to professional trimmers who have heretofore been unmitigated nuisances. I believe it is possible now to secure from Washington, or from our agricultural colleges young fellows who have been trained along the line of tree culture. I should like to give your readers a few simple rules covering my own experience and which, if followed, will secure for them healthy trees, well-shaped and long-lived. My first rule is to cut the transplanted tree very sharply back, before planting. In handling maples I remove every limb, and I cut as closely with nearly all other shade trees. If setting rather large trees which have already formed large limbs, I leave four or five inches of three or four limbs after removing the top down to about ten feet. My next point is to watch the starting of new shoots on these poles or trees, and remove those which are not needed to make a well-formed head. It is not advisable to remove these too rapidly, for if the tree is full of vitality it must be allowed to express itself in the way of limbs and leaves. Yet very soon I get out of the way every twig that will be of no use, or will grow in the wrong direction. At the same time, that is within a month of the starting out of the shoots, I remove also all sucker limbs around the bottom of the tree. By this time I expect the development of a few stout shoots which are to constitute the future head of the tree.

My third point is to mulch every tree as soon as it is set with a material that is pervious to the air, but retentive of moisture. After experimenting with a great many materials, I have come to prefer the ashes of anthracite coal. This material holds moisture admirably, and at the same time it allows the roots to be aerated sufficiently. The ashes of bituminous coal are too much charged with sulphur, and not desirable in any quantity. Another excellent mulch is autumn leaves, or sawdust, or both together, after they have been used in the stable for bedding, and are pretty well mixed with manure. Rank manure alone is not desirable. Any stable bedding as a dressing around a tree must be used with discretion. Tan-bark and coal refuse, or for that matter almost any old waste material will serve your purpose. Those who apply compost for manure can take directly from their compost piles, and apply freely. Understand that this mulching is an absolute necessity at any time, and especially if dry weather should follow your planting.

Your fourth rule should be to start the head of your tree at about the height it is desirable that it should remain when full grown; and then let your trees stand in the row so far apart that they will not collide seriously in after years. Street trees should stand about forty feet apart or possibly forty-five; and the head should be not less than eight feet from the ground. The reason for this particularity is that Nature did not originate trees simply to give you shade from the sun. Every tree needs its leaves for its own individual purposes, and one of these is to shade its own bark from the heat of the sun. Some trees are so delicate in their

bark, that if you remove large limbs you will find that the sun, striking directly on the body and limbs will cause the bark to split. Then the worms work in, and the people say the worms have killed the tree. They have done nothing of the kind; they have only begun to work over the dying wood into worm food. Some trees can stand this trimming up very much better than others; but the maple is specially sensitive, and that is the reason that we have so many half dead and worm eaten maple trees along our roadsides. Properly grown and properly trimmed, the maple is very resistant to insect attacks. There is, of course, a difference in maples, and for street trees the Norway maple stands eminently first. It is perhaps the best lawn tree in existence, and if you will give it room one tree will almost shade a whole lawn. The hard or sugar maple is most liable to be injured by bad trimming. Its sweet juices are liked by insects as well as by men. Cutting limbs generally sets these juices running and invites mischief.

My fifth rule in dealing with lawn and street trees is to always have on hand kerosene emulsion, with which I give them a thorough washing once a year at least, while young. It is the best material for brushing well into the bark's spaces, to drive out invaders. If insects have attacked the tree, bore them out with flexible wire, and apply the emulsion every two or three weeks. It should be applied very much stronger than when sprinkled on your rose bushes or gooseberries; take one pint of it to two gallons of water. This emulsion can be made on any rainy day, and kept in a store-room, in good condition for use for a whole year. This use of kerosene emulsion does not, of course, make it unnecessary at times to apply Bordeaux mixture. In fact, I would apply this Bordeaux fungicide early in the spring, to every deciduous tree in my possession. This, of course, must be done with a pump and a nozzle that throws a fine spray. You need not expect to have clean, fine trees unless you take care of them. In fact, a man should examine every tree that he owns, however old it may be, at least twice each year. If the bark is loose at any point he can find it out by tapping with the handle of his knife. Loose bark should be removed, and the scar washed with emulsion, especially around the edges, so that it will heal over quickly. If borers get in at the bottom, pile a bushel or two of coal ashes around the base of the tree, so that they cover the entrance holes of the beetles. This is my rule for old trees, and with such care a lawn may be kept in perfection for one hundred years.

The same rule holds for lawn trees as for shade trees, that is, do not set them too close. You must allow for growth. If you wish the ground to be better covered at once, put in what we call fillers, that is, trees that can be cut out after they have served their purpose. It would be just as well in many cases to bank shrubs about the tree lawn for a few years. When the trees have become large enough for individual beauty, remove the shrubs. Only be sure that choice trees, intended for permanent growth, are set far enough apart to allow for full development.

A few of our very best street trees are the linden, sugar maple, white weeping elm, catalpa speciosa and white ash. The maple does not heal over its wounds readily, but otherwise the sugar maple would be an ideal tree for our roadsides. The white ash heals over readily, as does also the linden, making these two trees among the best for street planting. The linden has the advantage of furnishing an enormous amount of food for our bees.

The Residence of Walter D. Rowles, Montclair, New Jersey

By Robert Prescott



THE house built for Mr. Rowles is a unique expression of the old New England farmhouse. The attractive entrance doorway, with hooded cover, the small, lighted windows, and the trellises built at either side of the entrance, at the corner of the house, and along the side of the living-porch, are all characteristic of its prototype. The site upon which the house is built is considerably higher than the street line; therefore, it permits of the building of a series of terraces from the sidewalk to the entrance porch. The foundation of the house is built of cement stucco. The

two-toned, blue figured paper. To the left of the hall is built the living-room, which extends the entire depth of the house. This living-room is also trimmed with white wood, painted white, mingling well with the natural color of the Japanese grass cloth with which the walls are covered. The broad, open fireplace, built of red brick with facings and hearth of the same, forms the chief feature of the living-room. French windows, placed at each side of the fireplace, open direct to the living-porch built at the side of the house, and affording the privacy which is not obtainable when the living-porch is built in connection with the entrance porch. The dining-room has a wainscoting composed of



The New England farm house is the prototype of this excellent design

superstructure is of frame construction, covered on the exterior with matched sheathing, building paper, and white cedar shingle, the last being stained gray, while the trimmings are painted white. The roof is also shingled and is stained a moss-green, blending well with the green of the magnificent trees which overhang it. The hall, built in the center of the house, is treated with white wood, painted white.

It contains a simple staircase, with white painted balusters, rises, and mahogany treads and rail, the latter sweeping down to the newell post, composed of a cluster of balusters. The walls of the hall are covered with a

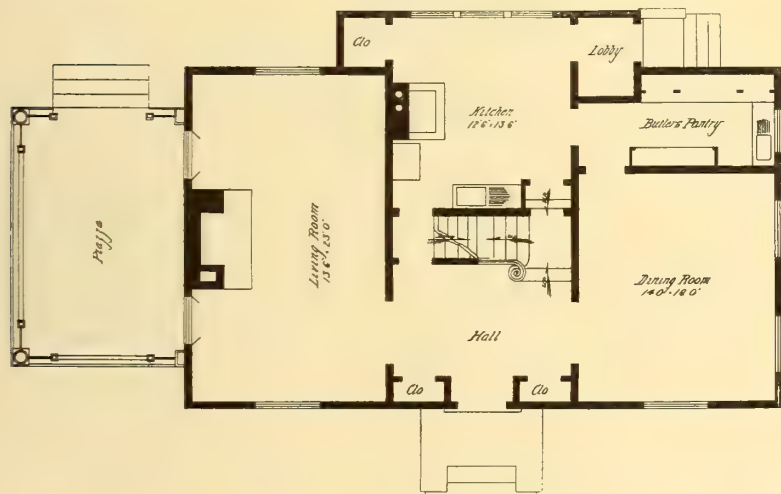
white painted battens, extending from the floor to the plate-rack placed at the height of seven feet. The panels formed by these battens are covered with a moss-green burlap. The wall space above the plate-rack has a frieze in autumnal colors of old green and brown. The second story contains three bedrooms, sewing-room and a bathroom furnished with porcelain fixtures. There are two servant bedrooms and bathroom, and a trunk room on the third floor. The laundry, steam-heating apparatus and fuel-rooms are built in the cellar. The cost of the house was \$9,000. Mr. Christopher C. Myers, of Montclair, New Jersey, was the architect.



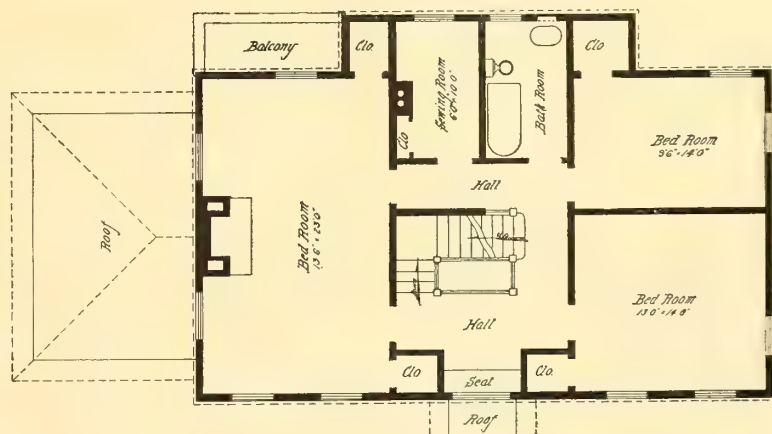
The dining-room has white painted battens with panels of green burlap. Mahogany furniture completes the furnishing of the room



The fireplace in the living-room is built of red brick with the facings extending to the white painted mantel shelf



First floor plan



Second floor plan



The owner's bedroom has a gray and white striped wall-paper on its walls, white painted trim, and Colonial furniture, including a four-posted bed



The hall has a Colonial staircase with white painted balusters and risers, mahogany treads and rail

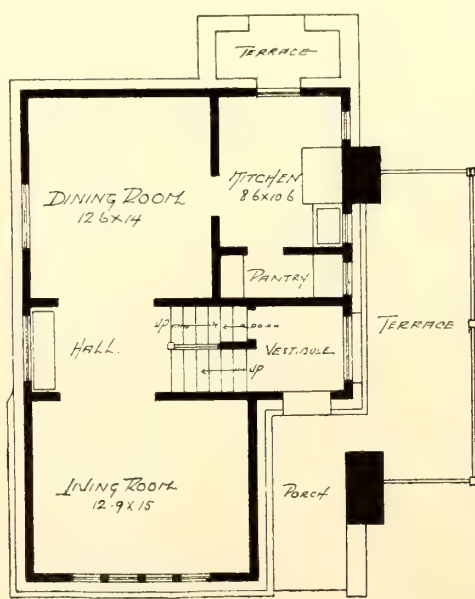


A House Built for Mr. J. A. Garrett, at Bronxville, New York

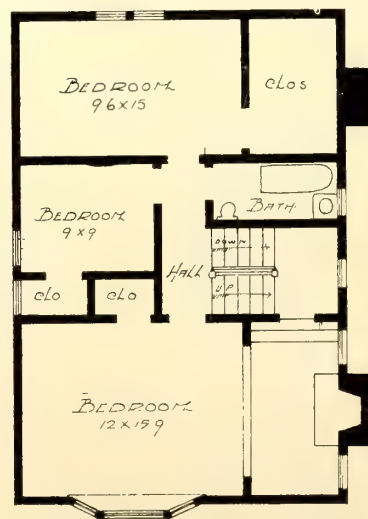
By Paul Thurston



THE architects who designed the house for Mr. Garrett, planned it according to the site upon which it was built. The rear of the lot being much higher than the front, it was deemed best to raise the entrance on the level with the ground line, so that the former could be reached direct from the graded level. The vestibule, which is reached from the entrance, is provided with a short flight of stairs which take one to the level of the main floor, while the stairs to the second floor ascend over the ones leading from the vestibule. Opposite the stairway a broad window is built, under which is placed a window seat. The hall, living and dining-rooms are trimmed with cypress finished in a soft brown stain. The living-room has a group of four windows built at the front. The kitchen is trimmed with cypress and is provided with a large pantry, sink, dresser and range. A walled terrace opens direct from the kitchen. The second story of the house contains three bedrooms and a bathroom, the latter furnished with porcelain fixtures and exposed nickel-plated plumbing. The



First floor plan



Second floor plan

woodwork of the bedrooms is painted white, while the walls of each room are treated in one particular scheme. A short flight of stairs from the vestibule leads to the cellar, which is built almost above the grade line. This cellar is cemented, and it contains the heating apparatus, fuel rooms, cold storage, laundry and workshop. The principal features of the house are the stone chimneys corresponding one with the other in size and height, and built at the side of the building. These chimneys and the stonework of the underpinning are of local blue stone laid with wide white mortar joints. The exterior walls above this underpinning are covered with white cedar shingles left to weather finish a natural silver-gray color. The trimmings are painted bottle green. The roof is covered with shingles and stained a moss-green tone, blending well with the massive foliage by which the house is surrounded. It is a difficult matter to secure a design for an attractive house at so small a cost of \$3,500, but in this case the architects, Messrs. Reed and Stem, of New York, have succeeded in producing a very interesting little house, furnished with the best appointments.



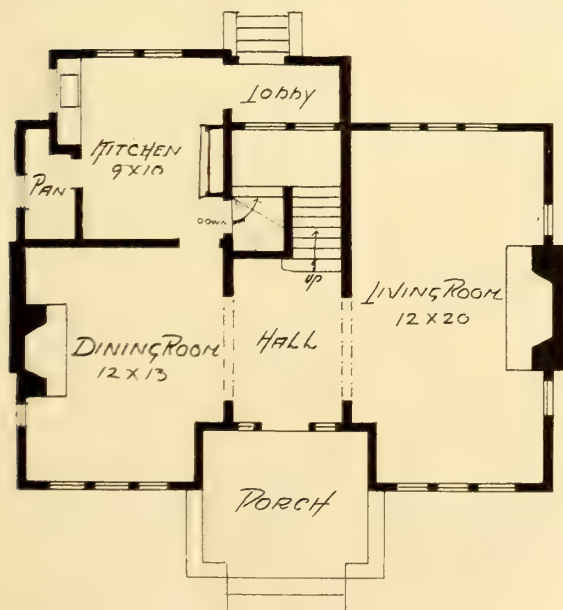
A House Built for Mr. E. L. Clifford, Wilmette, Illinois

By Henry Hawley



THE house built for Mr. Clifford represents a happy combination of good elevation, well-arranged plans and a small expenditure of money. All three are important factors in the building of a small suburban home. The house is of the gambrel roof type, with a small entrance porch at the front of the house, and a cement chimney built on the outside and forming an architectural feature in itself. The underpinning is built of rock-faced stone laid in a rough manner. The first story is built of wood, with the exterior coated with cement stucco on a metal lath placed on a wooden frame. The second story is covered with shingles stained in a moss-green effect, harmonizing well with the gray stucco and the green bottle trimming. The hall is provided with an attractive stairway leading to the second story. The main feature of the living-room is the fireplace built with red brick facings extending from the floor to

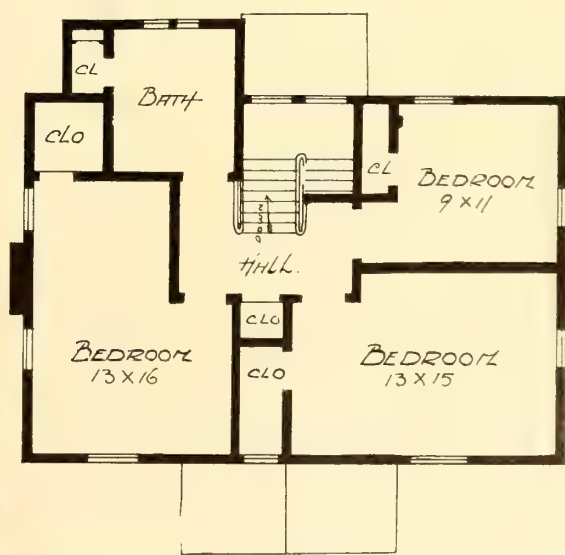
the ceiling, and provided with a hammered brass hood over the opening to the fireplace. This living-room, as well as the hall and dining-room, is trimmed with oak. The walls of the first room are treated in a soft yellowish brown tone, while the hall is in yellow and the dining-room is blue. The dining-room is provided with a plate-rack extending around the room at the height of seven feet; the wall space below the plate-rack is covered with blue burlap, while the space above is treated with a yellow tone. The dining-room also has a brick fireplace finished with a wooden mantel. The kitchen, opening direct from the dining-room, is provided with a large pantry, sink, dresser and lobby large enough to admit an ice-box. The second floor contains three bedrooms and a bathroom, the latter wainscoted and furnished with porcelain fixtures and exposed plumbing. The cellar contains the heating apparatus, fuel-rooms and laundry. The cost of the house was \$3,800. Mr. Thomas L. Martin, of Pittstown, Pennsylvania, was the architect.



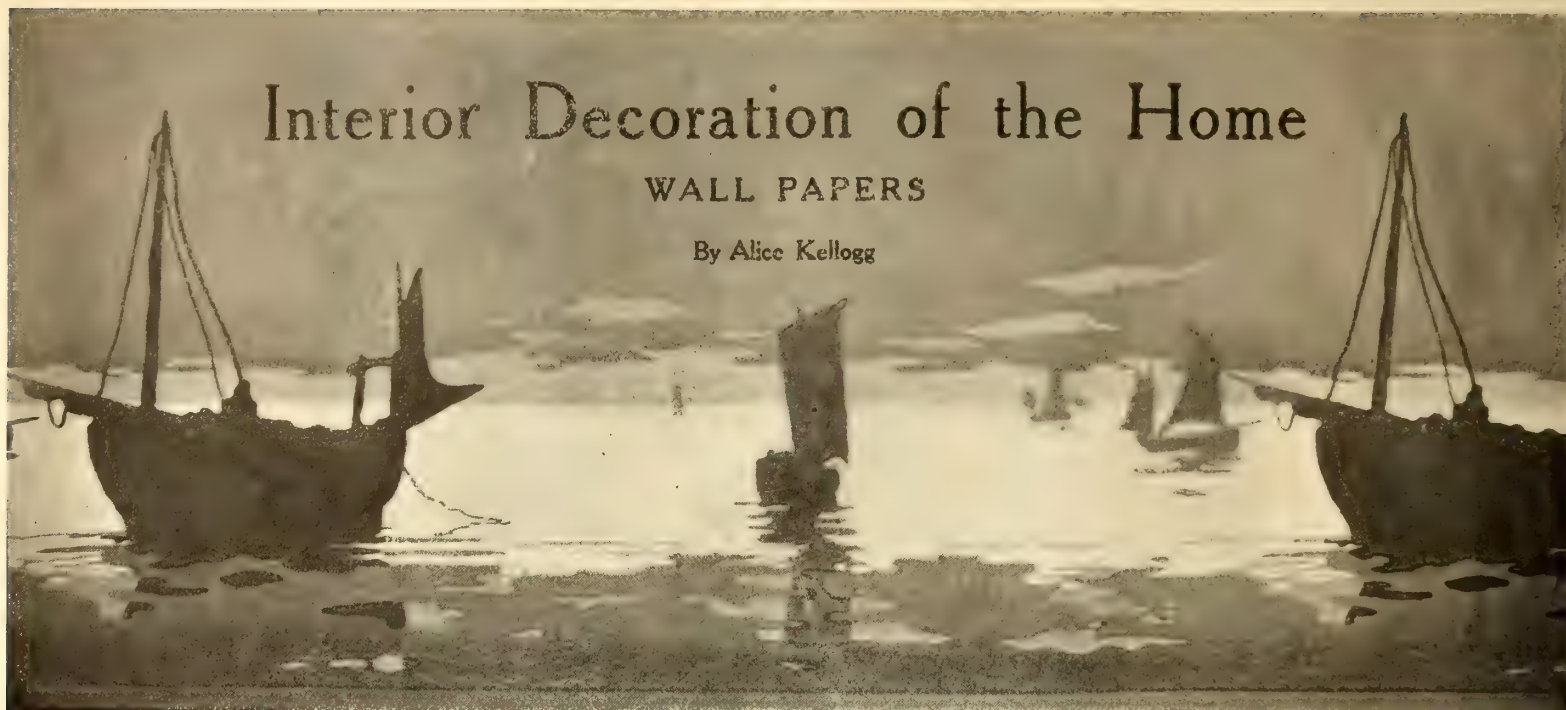
The first floor plan



Brass hood of the living-room fireplace



Second floor plan



THE unfitness of much of the wall decoration that is seen at the present time is not due to any lack of appropriate material. In fact the supply in the shops show a marked advance, artistically, over the products of previous years. Wall coverings are coming more and more into prominence for their contributory part in household decoration. So many and so diverse are the conditions to be met in each and every home that no specific rule may be laid down for their selection, but a knowledge of what may be had in the stores will be helpful to every one who has a problem at hand in the papering of a room, apartment or entire house.

Bedroom papers are to be found in so many exquisite colorings and attractive designs that one may hesitate a long time over the array. A few years ago there were only highly colored floral effects in exaggerated sizes; now there are dainty patterns in every possible tone, in combinations that suggest innumerable kinds of pretty "schemes." Prices, too, of these bedroom papers bar none from their purchase, as even the ten-cent roll will often lend distinctive charm to a wall.

The flower designs are naturally the first on the list, but a fancy for something different from roses or poppies may this season be readily gratified, for there are violets, pansies, sweet peas, corn flowers and nasturtiums in natural and conventionalized forms. Some of these flowers are supported on a trellis of square lines (as in the illustration) or a diamond framework. An upper-third

of a wall looks extremely well when covered with a trellis design, with a plain, striped or texture paper below it. When this is done the joining of the two papers should be covered with a wooden molding.

A newer phase for decorating the extreme upper wall, however, is to apply a flower border with its lower edges cut out to follow the design. These cut-out borders cost from fifteen cents a yard upwards. A graceful border design of La France roses caught up with light-blue ribbons (see illustration) measuring ten inches at its widest part costs forty cents a yard. A narrower border at the bottom, six inches wide, costs twenty-five cents a yard, and the pink chambray paper costs seventy cents a single roll of eight yards, twenty-two inches wide. These are all imported papers.

If a flower border is not desirable for its conflicting with the colors of cretonne or chintz there are simple ribbon borders in pink, blue, green or yellow that may be used with the lower portion either cut out or left with a straight margin. Some very narrow borders are applied around the casings of doors and windows, or to form panels of each division of the wall.

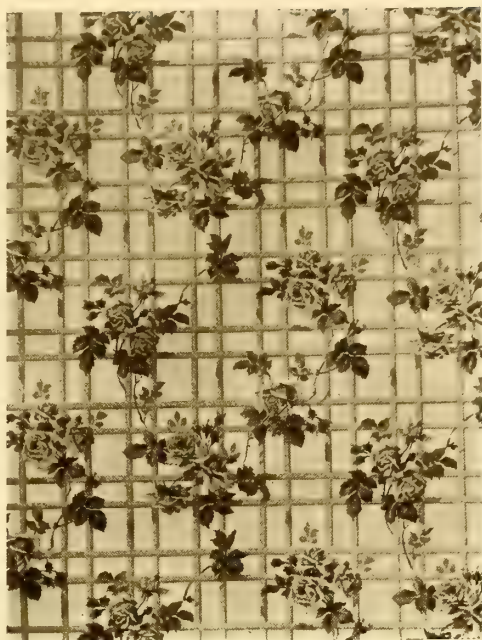
That the border has come to stay is evidenced by the manufacturer, both here and abroad, of stuffs not only to harmonize but to exactly copy its motive. Even in expensive silks and hand-printed linens this idea is apparent. The advantage is obvious, as it leaves the main portion of the wall for a plain or texture paper to serve as a background, while the decorative note in the border is enhanced



An ideal bath-room paper



A garden tapestry



A trellis background



A double border

by its repetition on bed-covers, curtains and furniture coverings. Cretonnes and chintzes to match the papers for side walls are still in vogue, but more discrimination is shown in adopting them in large quantities.

Striped papers for chambers appear in varieties of ways—two-tones either wide or narrow; jaspe stripes or with moire effects; mixtures of stripes and flowers (an English paper is illustrated at eighty cents a roll), or chambrays in shadow lines. A striped paper that is sharply defined is often wearisome when it is used in a room that is occupied continually, but for sleeping-rooms or guest-rooms this objection does not matter.

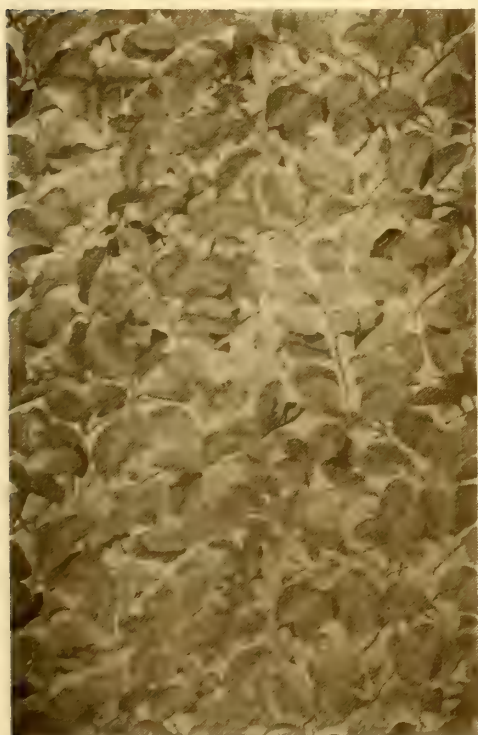
A bathroom that opens from a bedroom may carry the same wall paper if it is protected from moisture by a coat of colorless shellac. Bathroom papers that are made in this country cost thirty-five cents a roll in a medium grade, but if one wishes to expend two dollars a roll the German presentation of sea gulls flying over a gray-green sea is an ideal selection. A sanitary wall texture that has in a short time become popular for bathrooms has followed the artistic trend in quiet colorings and simple designs, and is well worth its cost of sixty cents a yard as it is over a yard wide.

Two places in the home offer themselves for a decora-

tive wall paper—the hall and the dining-room. For the former place a picture tapestry in good tones takes the attention pleasantly, requiring neither paintings nor prints to complete its decorative effect. The garden tapestry that is illustrated is made in England and costs eighty cents a roll. An American tapestry paper called "The Cedars" has an unusual combination of gray, green and gold in its printing and at seventy-five cents a roll creates a lovely effect of trees silhouetted against a sunset sky.

The plate rail that is now adopted in nearly every dining-room is too often an expressionless feature in this room, as everyone does not have a collection of china or metal to display. A scenic border to fit the space, such as the ships at sea that form the heading for this department, imparts more interest than merely filling in with a figured paper. A selection of this kind is also suggested for a den if the lines of the room suit it.

The general improvement in good taste in wall decoration is apparent in the demand for papers of a neutral character—grays, browns and buffs—which a few years ago was hardly felt. Now, every house must have some room treated with a gray paper, with curtains, rugs and pictures for the decorative elements.



A foliage paper



Flowers and stripes



A Colonial effect



Reinforced concrete is used for the first story, and shingles for the second. A shingled roof with a thatched effect is the feature of the house

The Home of A. F. Norris, Esq., Montclair, New Jersey

By Francois Picard

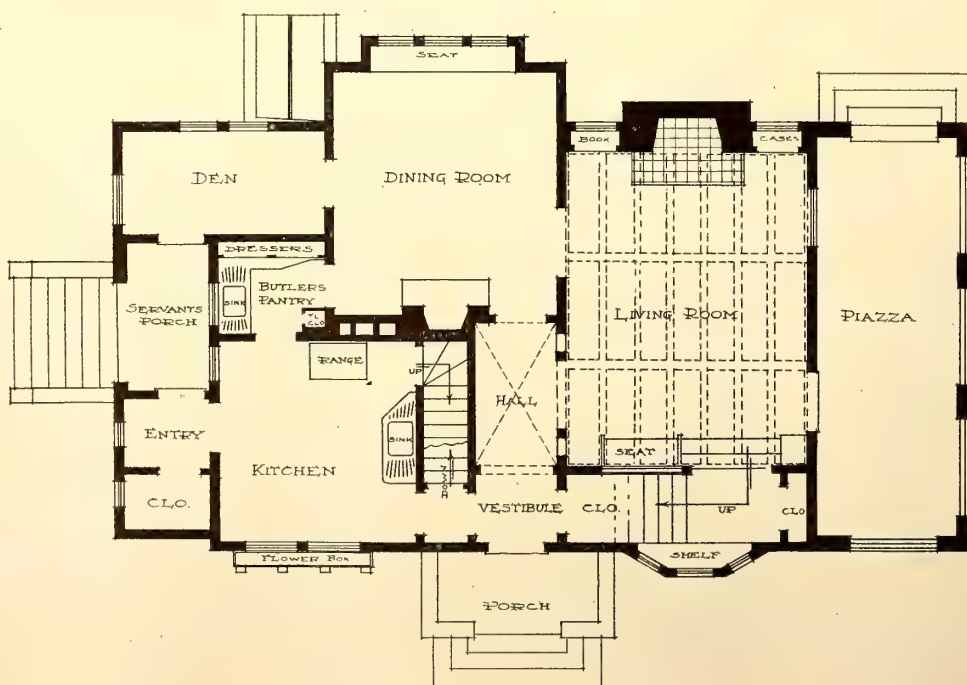
MR. NORRIS, who is the architect of his own house, has used a combination of concrete and shingle in a most artistic manner. The first story, together with the steps and porches, are of reinforced concrete. The exterior wall surface is finished in its natural gray cement color. The second

and third stories are of wood, and the exterior framework is covered with shingles, stained and finished to correspond with the color scheme of the cement walls. The roof is also covered with shingles, laid in an imitation of a thatched roof. The vestibule is reached from the porch, at the front of the house, and forms an access to the small hall, from which the dining-room and living-room are reached. The last is finished in cypress, in a soft brown tone. The staircase, rising out of the living-room

with a broad landing and seat, is placed at the front of the room, while at the opposite end of the room is built the great open fireplace, furnished with Welsh tiled facings and hearth, and a mantel shelf. Bookcases are built in at each side of the fireplace. French windows open from the living-room to the living-porch, which is built at the side of the house. The dining-room is also trimmed with cypress, finished in Flemish brown, and it has an open fireplace, with

facings of mottled vitrified tile rising from the floor to the ceiling.

The casings of the doors and windows reach from the floor to the ceiling, while a frieze extends around the room on a line with the door and window casings. The doors leading to the butler's pantry and the den are made of beveled batten cypress fastened together by heavy wrought iron bolts. The wall surface is of rough plaster, tinted a soft, yel-



First floor plan

lowish brown tone. The butler's pantry is fitted with a sink, dresser and drawers. The kitchen has a range, dresser, sink, closet, a lobby large enough to admit an icebox, and a servants' porch. The den is reached from the dining-room, and has a door leading to the the service court.

The second floor of the house contains the owner's suite, guest rooms and bathroom. The owner's room as well as the other rooms are carried out in one particular color scheme in the tones of soft brown and green.

The bathrooms have tiled floors and wainscotings, with the walls above the wainscotings treated with white enamel paint. These bathrooms are furnished with porcelain fixtures and exposed nickle-



An attractive feature of the treatment of the service end to a house

plated plumbing.

There are two servants' bedrooms, and a bathroom, and a trunk-room on the third floor.

The cellar is provided with a laundry, hot-water heating apparatus and fuel-rooms complete.

The service end of a house is not, as a rule, very attractive, but in the designing of the service end of this house particular attention has been given to its detail.

The lobby is provided with a large closet fitted with a window and used for a cooling and storage room. A door opposite the one in the lobby opens into the den from the servants' porch, and provides a way by which the owner of the house may reach the rear of the building. The balcony over is reached from one of the bedrooms.



An arts and crafts dining-room in perfect harmony



Garden Notes

Conducted by Charles Downing Lay

Fifteen Good Lilies



HERE are numerous lilies, and all of them have some beauty, but many are tender or difficult to grow; indeed, we might say that almost all are difficult, or at least capricious, and even the experts disagree as to the cause.

In the following list there are fifteen which are easy to grow—for lilies. All are beautiful and worth planting, even if they die the second year.

As a rule, lilies should be planted in a fairly rich, sandy loam, where there is good drainage and where the water cannot stand in winter. The front of the rhododendron bed usually satisfies these conditions. The shaded ground, the winter mulch of leaves, and the freedom from disturbance which they have in the rhododendron bed is a distinct advantage. They bloom late, and give the rhododendron bed a gay appearance at a dull time. Besides, the rhododendrons form a grateful background for the thin-leaved, stalky lilies. Spring is the best time to plant most lilies.

1. *Lilium candidum*. The Madonna lily is perhaps the greatest favorite of all white lilies. The flowers are large and handsome, on a stalk four or five feet high. They are often planted with perennial larkspur, because they bloom at the same time. This lily must be planted in August, as it cannot be moved after the basal leaves grow in September.

2. *Lilium auratum*. The golden-banded lily of Japan. Has white flowers with a yellow strip on each petal, and numerous purple spots. It is four to eight feet high, and blooms in July and August. It is best planted in large clumps in partial shade.

3. *Lilium speciosum*, the Japanese lily, in several varieties, white, pink, deep rose and crimson, is very lovely. It should be in good clumps in the shrubbery or herbaceous border. It is the latest lily to flower, and grows three to four feet high.

4. *Lilium testaceum*, the Nankeen lily, is supposed to be a hybrid, and is perhaps the most beautiful of all lilies. The whole plant is full of grace and charm, and its delicate warm, yellow flowers, with brick-red stamens, are entrancing. It grows in full sun or partial shade, and will endure much dryness. It looks better planted singly among

evergreens than in clumps. It is four to six feet high.

5. *Lilium tenuifolium*, the Siberian coral lily, is very low—not more than two feet high—with fine leaves and five or six brilliant scarlet flowers with a waxy texture. It is good planted singly in the rock garden.

6. *Lilium sulphureum*, the sulphur lily, is very large and somewhat heavy and solid, but delicate in color. It is primrose inside and rather a soiled chocolate-white outside. It is three to four feet high.

7. *Lilium canadense*, the wild yellow lily, has many nodding, clear yellow flowers, on a stalk two to five feet high. It does well in partial shade.

8. *Lilium elegans* has many varieties in red, orange and yellow. All have merit and are interesting in the border with day lilies and iris.

9. *Lilium superbum*, the American Turk's cap lily, grows six or seven feet high, bearing a large cluster of bright orange flowers with dark spots. It is good in the shrubbery or the wild garden.

10. *Lilium Henryi* is like *speciosum* in shape, but is orange-yellow with green bands. It will grow six feet high, and when established bears perhaps twenty flowers. Plant singly in the shrubbery.

11. *Lilium tigrinum splendens*, the tiger lily, is well known, and in the right location very handsome. In full sun it appears pale and washed out in color, but in shade it is more brilliant. When once established, it will take care of itself and increase.

12. *Lilium chalcedonicum*, the scarlet martagon, is brilliant scarlet, three or four flowers to a stalk four feet high. It will grow in dry places better than most lilies.

13. *Lilium rubellum*, is low with delicate pink flowers which last a long time. It is earlier than most lilies and would look well if planted with white *Viola cornuta*.

14. *Lilium maculatum*, is a Japanese lily of great hardiness and beauty. It is three feet high with reddish orange flowers in clusters of six to ten. It should be planted singly in a clump of early white Phlox, perhaps.

15. *Lilium Grayi*, is a native lily with dark orange red, bell-shaped flowers, beautifully spotted. It grows one and a half to three feet high, and is excellent in the wild garden, as well as in the more cultivated one.

Open Air Orchard Heating

By W. Frank McClure



THE process of artificially heating the air in an orchard, on a dangerous fall in temperature, could be demonstrated in no better way than by the description and illustrations herewith presented of the recent success in saving fruit in the Grand Valley in Colorado. The 1909 crop of fruit, from the Palisades above to Loma below, valued at \$3,000,000, owes its existence to a unique battle which was waged against Jack, Frost at a time when the fruit was at its tenderest age. By unusual generalship and the work of hundreds of volunteers, the temperature in these orchards was actually raised eight and nine degrees over twenty-seven miles, and a precedent was established which will mean much to the future. In California it is said that the temperature has been raised heretofore in some single orchards two or three degrees, but never to eight degrees, and never before has the work been carried on over so great an area. Plans are now on foot to have every bear-

many different types, some burning oil for fuel and some coal, and placed at intervals in the orchard, after the manner shown in the accompanying photograph.

Oil was carried to the pots in wagon tanks equipped for the purpose. Spraying machines were also used in distributing the oil.

A large supply of lighters was kept in readiness in a dry place. Many of these lighters were made by wrapping waste about a twisted wire.

All operations were directed from Grand Junction. Weather stations established over much of the territory, and equipped with thermostats, when the threatening weather arrived, made half-hourly reports on the temperature to Grand Junction.

When finally the danger point was approaching, warning was sent to all the ranchmen to light the fires. Volunteers also in nearly all walks of life made their way in automobiles and wagons and on bicycles over the entire area. The Trades and Labor Assembly adjourned

Spraying the trees with apparatus which also conveys oil to the pots



Raising the temperature in a Colorado orchard



A photograph taken late in the evening, showing coal pots with draft

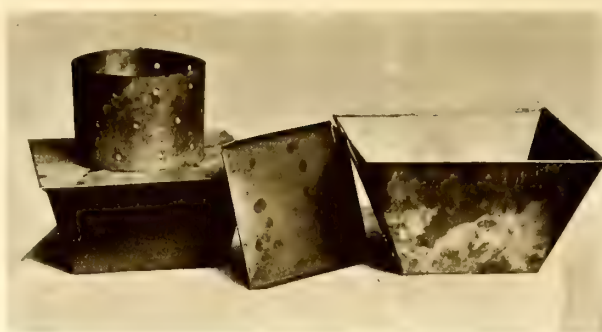
ing orchard in the Grand Valley protected by next season, not that there is any likelihood of frost every spring in this section, but because the protection against possible repetition of this year's experience is considered cheap insurance. Representatives of other fruit-growing sections have also recently visited the Grand Valley, sent there from their several communities to learn more of the recent experiment.

The raising of the temperature over this large area was accomplished by means of some 300,000 smudge pots of

its meeting, and worked all night rendering assistance. Men worked in shifts, some at night lighting the fires, and others in the daytime filling the pots. Even women assisted in the work. The campaign in all lasted four days. So well did this orchard-heating idea work, that while the temperature outside the heated area dropped as low as 20 degrees, within the heated area it did not go below 29½ degrees. Seventy-five per cent. of all the fruit trees which were in bloom were cared for directly, while even orchards owned by those who were skeptical of the idea were saved by the

fires in the adjoining territory. As previously stated, there were a great many different kinds of pots used in this work. The number used per acre depends upon the size. Forty, sixty or eighty pots per acre was the average. When coal is used, it is usually lump or nut. With coal at \$4 a ton, some one has figured that it cost him \$4 per acre to heat his orchard for a six-hour run. Some of the oil heaters are used to the number of sixty or eighty to the acre. In the opinion of some, it is better to have a small-sized pot and use more to the acre, say sixty or eighty, as just stated. Taking one of the many kinds of pots as an example, and figuring coal at \$4 a ton, the cost of equipping with heaters and all other facilities for the first year for ten acres is estimated at \$449.25, and for the second year \$186.25. This provides in the initial cost for 800 heaters, or 80 to the acre. It also provides for 40 tons of coal, kindling lighters, 50 pounds of waste, 200 gallons of oil for lighting, the storage for oil, and the building of a coal house. For the first year's equipment for oil pots, including 800 pots for ten acres, and fuel at 5 cents a gallon, the cost is estimated at \$494.25, and for the second year \$153.75.

Now that the question of raising the temperature even 10

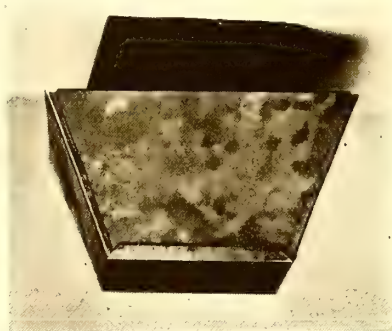


One of the many different styles of pots used in smudging

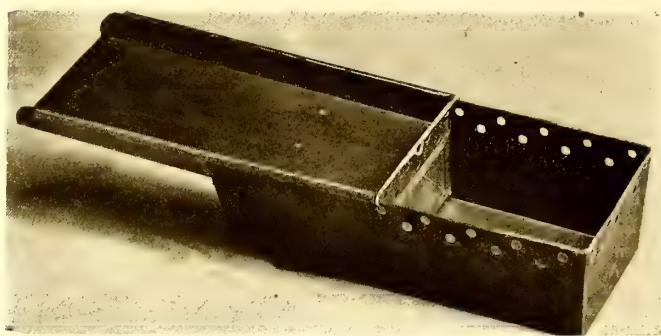
or 15 deg. over a large area has been settled beyond doubt, the next problem facing the fruit growers is that of regulating the temperature and economy of fuel and labor. For example, there is no need of raising the temperature 10 deg. when raising it 2 deg. will put the blossoms out of danger. Some are planning to meet this problem by having a large number of small pots and only light enough in them to keep the temperature

above the danger point. Others have devised pots with a system of drafts, so that the heat may be increased or decreased as is necessary.

The fruit ranches of the Grand Valley are very extensive. One, for example, contains 243 acres, and is valued at a quarter of a million dollars. Its crops include peaches, apples, pears, plums, cherries and soft-shell almonds. An army of people



An oil pot with hood in place



Another type of pot in which oil is used

is required to pick the fruit. By another season it is expected electric lines will be running out to the orchards all over the valley, and refrigerator cars will be carried right to the orchards.

The system of heating an orchard, as described herewith, is applicable for any orchard of any climate, and is particularly interesting for the fruit growers of Florida, or any climate which is liable to be visited by a sudden and unexpected frost.

A Combined Forcing Bed and Storage Pit

By Richard Maxwell Winans

FOR anyone growing and storing vegetables, whether living in the suburbs with only a "handkerchief" garden, or on a large country estate with hundreds of acres, the following plan for a combined hot bed, cold frame and storage pit will have advantages not to be secured in any similar arrangement. As a hot bed or cold frame it has the advantage of the air space and head room of a hot-house, with morning and afternoon light reaching every inch of bed space, and in which cucumbers, melons, tomatoes, egg plant, etc., may be grown from planting of seed to fruiting maturity. As a storage pit after the growing season, it is perfect; the crops are easily stored, covered for protection with little trouble, and are accessible in any weather. It is simple of construction, inexpensive and permanent. It may be of any length desired; to hold a few hot bed sash or a hundred or more feet long.

Select a location for the bed that is elevated rather than depressed, having good drainage. If sheltered from north winds, all the better. The length of the bed should run north and south, to insure an equal distribution of light to the plants from both sides.

First "lay out" the bed roughly, but with accuracy as to "lines," fourteen feet wide, the length desired. Inside measurement of the bed is 11 feet 6 inches. The extra two feet width allows posts to be easily set on a true line without interfering with sides or banks. Plow off in layers and remove with wheel or slip scrapers to a depth of two to four feet, or deeper if desired, where elevation and drainage are good. Where tomatoes are to be fruited in the frame, the bottom should be at least three feet below the ground level, allowing for six to eight inches of "soil" filling.

With spirit-level and "straight-edge," or line, get the floor of the bed level lengthwise, with a slight slope from

sides to center, for drainage. When a pit is finished, dig a trench in the center and lay a four or six-inch tile in sand or gravel, to insure the drainage of surplus water. A perfectly dry floor is essential when the pit is used for storage.

Allowance must be made in setting posts for thickness of inside planks or boards. Finished inside measurement must be exactly 11 feet 6 inches in the clear at the top. Sawed posts are best; they save hewing to obtain a straight face inside. They should extend twelve to eighteen inches above the ground level, to permit sliding the sash down for ventilation, watering, etc., and should be set from three to four feet deep, according to the soil, and be well tamped. A taut line at the bottom will do for setting, but the top of posts should be carefully "sighted" to secure perfect alignment.

The rafters, ridge pole and "guide" strips should be perfectly straight lumber, thoroughly seasoned. Ridge boards ("cc" in Figure 4) should be free from warp and have perfectly straight edges, so that when joined as shown, the joint will be wind-proof. Rafter rail ("d") is 2x2 inch stuff. Well spiked into posts and closely nailed to planks, this rail will support the heaviest covering required for winter storage. Blocks are nailed on these rails snug to both sides of the rafters, to hold in place. Figure 5 shows guide strip ("c") of 1x1 inch dressed pieces. Give these two coats of paint before attaching, the first heavy with raw linseed oil, to prevent swelling and binding the sash. When measuring rafter spacing, allow a margin of a quarter-inch leeway, so that the sash will work free in the slide.

A detail of double ridge pole is shown in Figure 2, "n" and "g" being spiked together after the top plate has been cut to receive the top of the rafter ends, Figure 3. Letter "w," Figures 2 and 3, represents a heavy wire, or an iron rod, bent at an angle to lay on rafters, with the ends turned and driven into the wood, as shown in No. 2, to hold rafters in place, the guide strip ("e") being cut away to allow setting of binding wire. A ridge board of 1x6 and 1x8 inch pieces (Figure 4, and at "cc" in main drawing), is necessary to prevent strong winds getting under and lifting the sash. A strip 1x3 inches, notched to fit over the binding wire, is nailed edgewise underneath and set between rafter ends for ridge board support, as indicated in the main drawing. The posts are cut slanting at the top, to permit the sash to slide down readily.

To "set up" the frame, "toe-nail" ridge pole "g" to posts "cp," supporting with rafters. Place a flat stone or square block under the posts, to prevent settling, and have

the ridge perfectly level. Place the center posts five feet apart if to be used for storage, or eight feet apart if for the plant bed only. Do not nail the rafters to a ridge piece. Temporary supports may be readily put in position between eight feet spacing, to hold the weight of the covering.

If to be used as a hot bed, run a line of water pipe, with frequent taps, on the side under "d," so that the bed may be watered during the coldest days without exposing the plants.

To convert into a storage pit, remove the sash and place boards on rafters lengthwise of the bed, to hold the layer of straw or other rubbish, and the covering of earth. To prevent heating, ventilators, 4x4 inches inside measure, are placed at suitable intervals through openings along the ridge, to allow escape of moisture.

Build the ends of the bed on a "form" or frame, and set tight against the end posts without nailing. Heavy hooks and staples are used to keep it snugly in place. The ends may thus be easily removed to drive through with a wagon. When used as a storage pit a door is cut into ends, to one side of the center, large enough for a man to pass easily in and out, to remove the stored crops during the severest weather without disturbing the top covering. This should be a perpendicular sliding door, to permit opening without removing the banking of earth or manure. To

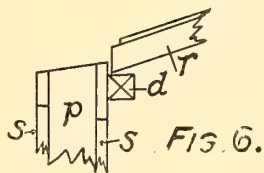
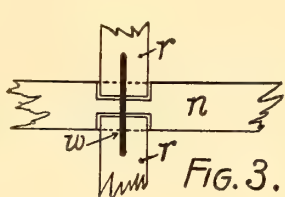
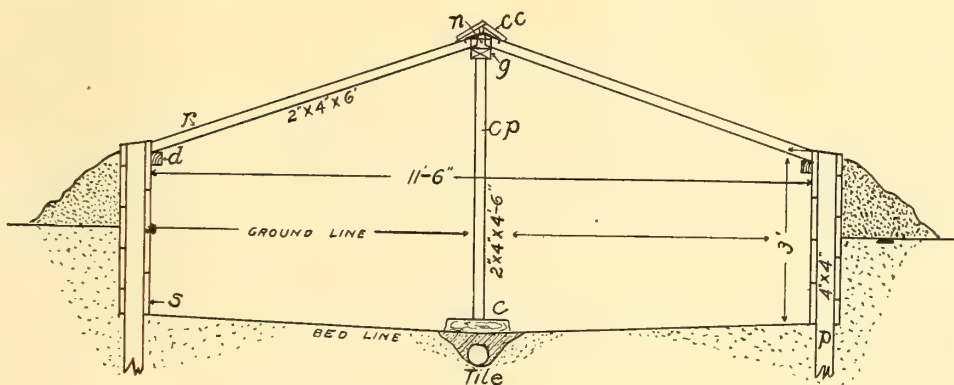
provide access to the different vegetables, etc., at any time, leave a "walk" through the center, with a plank edgewise along each side.

Almost any perishable crop may be stored in this pit with safety. For celery it is a winter storage *par excellence*. Taken directly from the field without bleaching, and packed solidly,

with roots set in loose, moist earth, celery will bleach quickly and keep crisp and fresh until late in the spring.

For ease in handling, potatoes, onions, beets, carrots, turnips, apples, etc., are stored in crates. In this way, too, air spaces are provided without the use of shelves. Cabbage should be trimmed close and piled solid to the height of the rafters.

Because of the different temperatures required when growing, for instance, tomatoes and lettuce in the same bed, it will be necessary to run partitions crosswise of the bed, so that segregated sections may be regulated to suit the requirements of the plant. These should be put in so as to be easily removed. With the use of partitions, too, one end may be used as a hot-bed and the other as a cold frame. And where but one bed is built, this is quite a consideration, especially to supply the needs of a family who may want to grow lettuce, radishes, spinach, green onions, etc., in one end, and to start plants or grow tomatoes, etc., in the other.





CORRESPONDENCE



The Editor of *American Homes and Gardens* desires to extend an invitation to all its readers to send to the Correspondence Department inquiries on any matter pertaining to the decorating and furnishing of the home and to the developing of the home grounds.

All letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this Department.

Problems in Home Furnishing

FRAMING AN OLD PICTURE

"**L**ATELY, I have come into possession of an oil painting that is three feet high and nearly six feet long. The frame is broken in places and badly discolored. The canvas is dull-looking. Yet the subject is interesting to me if I knew where to place it. Would it be appropriate above the mantel in my library? What would a frame cost? What style of frame would be the best?"—C. J. C.

A picture of this size would make an excellent over-mantel decoration and would be appropriate in a library. (In fact, much more suitable than a mirror.) One of the modern frames with heavy ribs gilded with a flat gilded molding attached close to the canvas, the whole measuring about five inches in width, would cost from twenty-five to thirty dollars. At an extra cost of a few dollars the canvas could be restored, which would increase the value of the decoration.

LINING FOR VELVET WINDOW CURTAINS

"Will you kindly tell me through the magazine what is best to use for lining velour window curtains? I would prefer a tan color as there are no lace draperies next to the glass."—A Boston Reader.

If the expense need not be considered very much the best lining for a velvet curtain is a soft silk that is made especially for this use at two dollars and a half a yard. This is fifty inches wide. There are also lining materials from sixty cents a yard (fine curtain sateen) upwards. The color should be selected to look well against the pane of the window sash, both outside and in.

PLACING A GRAND PIANO

A request from a subscriber in New York City as to the placing of a grand piano, can only be answered in a general way, as there is no diagram of the room given. Usually a piano shows to the best advantage when its keyboard is seen when one enters the room. This rule cannot always be followed, however, as the curved side of the piano must be considered. The left side of the piano should be placed along the wall. The light, both in the day-time and at night, is another factor to be considered in this problem.

CURTAINS FOR PLANT ROOM

"I am sending you floor plans of our new house and would greatly appreciate any help you can give me with the different problems that have come up. Especially I would like to know how to curtain the windows in the small conservatory or plant room that opens from the dining room. My first thought was to hang lace curtains

like those I shall use in the dining room, but since the plants have been put in this room this does not seem very practical. Would the ordinary shades be better?"—C. E. S., Nebraska.

The treatment of the windows in a plant room would, of necessity, be different from that given to a room used in other ways. The lace or net curtains are unpractical; the ordinary linen shade could be used, but the Japanese rattan shade that is rolled by pulleys and cord would better suit the idea of the room if they can be obtained. These are in the natural color and diminish the light if necessary, and afford protection to the plants when drawn at night. Another suggestion is to have some glazed chintz made up into shades, selecting colors that harmonize with the wall paper of the dining room. The ground work of the chintz is usually white and for this reason the shades would look better with white-painted wood-work.

COVER FOR A CARD TABLE

A suggestion for making a folding card table now covered with bright green felt more in keeping with the quieter tones of a parlor where it is brought into use has been asked for. If the top of the table can be lifted from the felt (as is sometimes possible), a piece of brocade, silk armure or velvet could be attached in its place. Or, the finer material could be fastened over the felt and edged with gimp.

COLOR SCHEME FOR A LONG ISLAND COTTAGE

"We are making over rather an ordinary cottage for our summer use by tearing out partitions and making one large living-room, a small reception hall and a dining-room on the first floor. Upstairs, there are two family rooms and two guest rooms. Our plan is to have as little furnishing done as possible, and for this reason we want to have the wall papers as attractive as possible. Please send me samples of papers for these rooms with this need in mind. Could a gray paper be used in the hall? We shall add a high wainscot of wood in the dining-room and a shelf to hold some old blue china."—P. B.

The gray paper could be used in the hall if a foliage or landscape effect were chosen. There are several designs of this kind on the market. The living-room opening from reception hall could be papered with a green-and-white foliage paper showing a squirrel's head peeping through the leaves. In the dining-room as a background for the blue china a two-toned buff or yellow paper could be used above the plate shelf.

The two family bed rooms could have chintz papers with a broken stripe. The two guest rooms could be papered with a lattice design and a blossom paper with birds in the border.

Garden Work About the Home

"**W**E MEAN to follow the good suggestion in 'Garden Notes' for April, 1909, and have a garden just for roses. We have selected the site and built the fence around it and now we are trying to decide on the kinds of roses to grow. Can you help us in this?"

Without knowing the size of your garden it is hard to say just how many varieties of roses you should grow, but the following list of the best roses will probably be long enough.

There are hundreds of named varieties of roses and the number is increasing every day. Many of them are not distinct enough to be told apart by an unpractised eye, and many of them are good in only one characteristic and mediocre in the others, so the rose lover should grow only the best varieties: best because they have proved themselves, in years of observation, to be reliable and wholly satisfactory.

It would be a mistake to plant too many varieties. A dozen plants of one variety in a mass will give a better effect than twelve all different.

The tea roses, which are distinguished by their tea-like fragrance, and shades of yellow, which are lacking in the hybrid perpetuals, are the best garden roses. They bloom more constantly than the hybrid perpetuals (which are really June roses) and they suffer less from our droughts. They are not absolutely hardy but need some protection in winter north of New York; protection which should take the form of earth thrown up about the crown (or perhaps even covering the bent over branches) rather than the familiar straw overcoats.

TEA ROSES

Adrienne Christophe, flower large, full coppery apricot yellow.

Anna Olivier, rosy flesh, shaded with salmon pink.

Catherine Mermet, light rosy flesh.

Devonensis, creamy white, blush center.

Hon. Edith Gifford, white flesh, suffused with yellow.

Perle des Jardins, deep straw yellow.

Princesse de Sagan, velvety crimson.

The Bride, pure white.

PERPETUAL MOSS ROSES

These, too, bloom in the autumn and are besides indispensable because of their beautiful buds. They are fragrant and hardy.

Blanche Mireau, pure white.

James Weitch, deep ocolet crimson.

Salet, bright rose.

There are climbing teas which are scarcely to be attempted north of New York, and a few climbing hybrid perpetuals which should be hardy. Among the latter, Climbing Frau Karl Druschke is perhaps the best.

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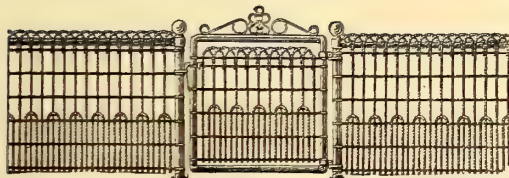
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If you are so fortunate as to own a hardy garden, then you and I have an interest in common. We may never meet, but we may become acquainted—you may write to me about your garden, and I will send you my book of Hardy Plant Specialties which will tell you of Delphiniums, Irises, Peonies, Phloxes, Poppies, etc. My collection of these essentials of the hardy garden is everywhere acknowledged to be the most complete and comprehensive of any in this country.

(Continued from last month)
A Revelation My first catalogue, issued about a year ago, became almost a necessity, but in offering my plants to the public for the first time, I had many misgivings lest the pleasure from growing flowers just for themselves would be marred by growing them to sell. I little anticipated the generous response my first book brought forth. From all over the country have come the most delightful letters—a wonderful inspiration to me. I want to thank my new-found friends, whose appreciation so kindly expressed has given me new, **An Inspiration** unexpected pleasure.

(To be continued next month)
If you care for these things you will want my catalogue, for it is "different." A copy free, if you write for it.

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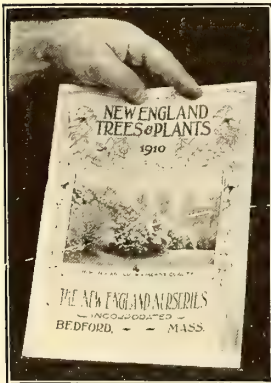
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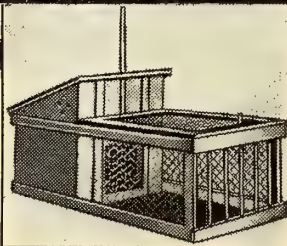
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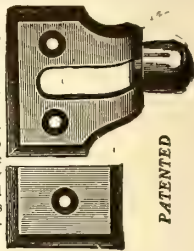
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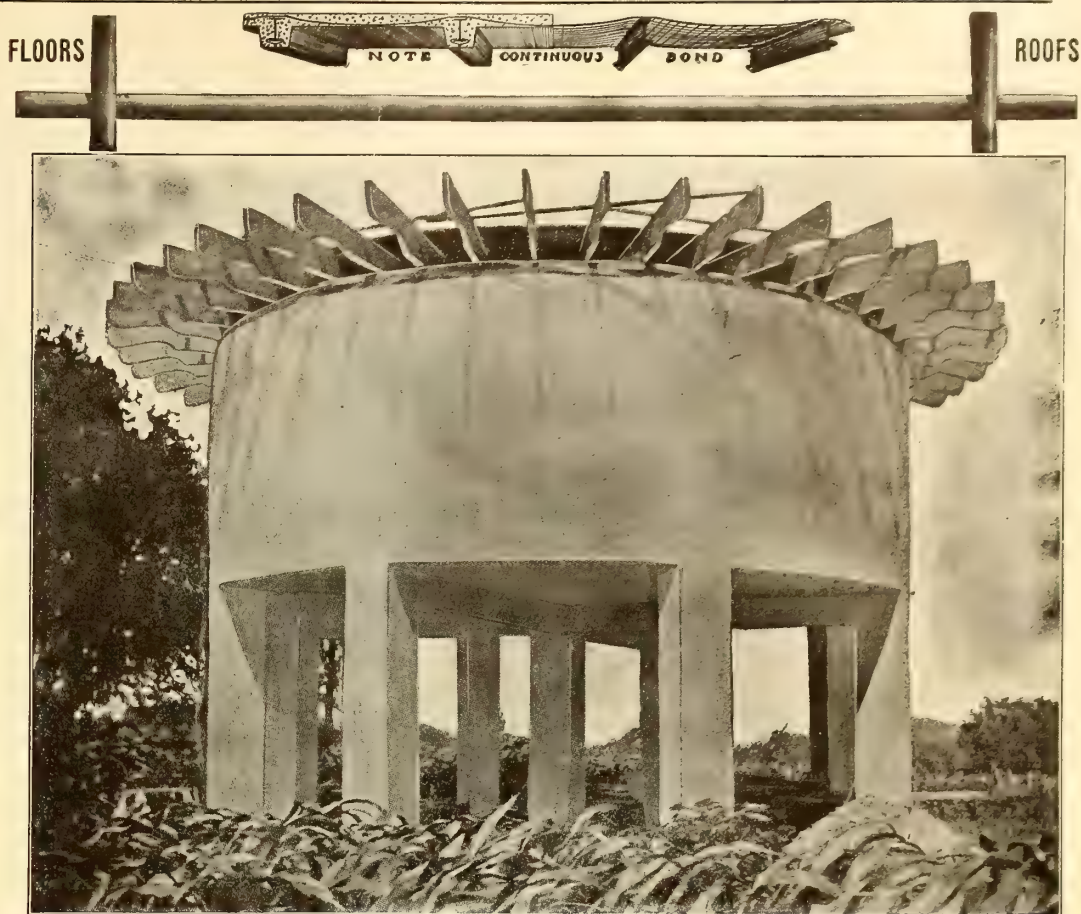
FIRE PRECAUTIONS FOR THE GENERAL PUBLIC

THE general public is chiefly accustomed to take measures for protection against fire collectively. That is to say, the general public maintains fire departments, waterworks systems, employs fire marshals, passes building ordinances and takes various other steps toward fire prevention and fire extinguishment. These precautions are familiar to us all, says Captain Greely S. Curtis in a paper read before the Massachusetts Firemen at Plymouth.

The additional precautions which the general public can take individually deserve our attention and consideration. The two general classes of such precautions are: First, taking steps to prevent fires from occurring; and second, being prepared for fires when they do occur. To prevent fires, householders, should be taught the value of the following preventive measures: Use only metal barrels or receptacles for hot ashes. This should include, of course, barrels for ashes which are supposed to be cold, but which may contain a few hot embers.

Do not allow rubbish and trash to accumulate anywhere on the premises, particularly in cellars, under stairways and in attics. Avoid handling benzine, gasoline and other inflammable fluids in the proximity of fire or lights. Use safety matches exclusively. The use of parlor matches is dangerous. This danger is usually insufficiently appreciated. The general public is seldom informed as to the large number of fires supposed to be caused by matches set off by rats, or mice, or children. Such fires would be avoided if safety matches only were used. Never fill kerosene lamps by candle or lamp light. There is danger in the improper use of electric lamps and electric wiring. The practice of hanging swinging pendant electric wires over gas pipes or nails always involves some danger, as does also leaving hot incandescent lamps close to clothing or other textile materials. Brick fire stops set near the corners in partitions and floors should be specified in new frame buildings. In built up communities one's property should be protected from neighboring fires by means of fire walls and wire glass in windows. The foregoing are a few preventive measures.

Equally important are the measures for fire extinguishment. These include special equipment for extinguishment, such as: Automatic sprinklers with gravity tanks and fire pumps; such equipment being particularly desirable in mercantile and manufacturing buildings. Automatic and manual fire alarm systems by which alarms may be promptly transmitted when fires occur. Standpipes with hose and nozzles permanently attached, preferably controlled by gates outside the building. Portable chemical extinguishers of various sizes suitable to the property to be protected. Steamer connections through which the city fire engines can furnish water to the sprinklers or standpipes within the building to be protected. In addition to the foregoing, one of the most important precautions in which the fire department can assist the individual householders is in preparation for the event of fire. By preparation I do not refer to filling the hand grenades with benzine, as we are told is the customary procedure among some of our Hebrew fellow citizens, but I mean instruction as to what should be done by the different individuals in the household when fire occurs.



A concrete tank erected on estate of Edmund Tatham, Katonah, New York

Frederick J. Sterner, Architect - - New York
De Lancey A. Cameron, Builder - - New York

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I Save Your Garbage Troubles

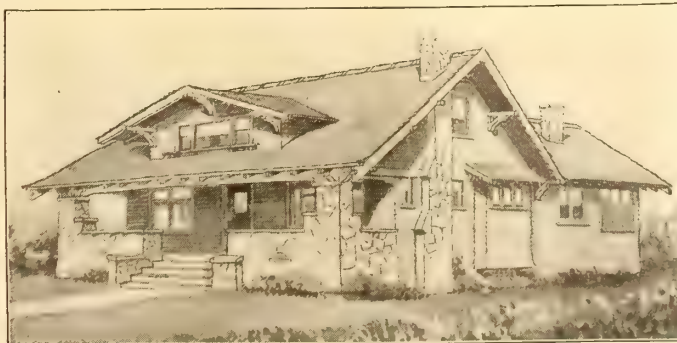
Ever wished for a garbage can in which garbage cannot freeze in winter—and stink in summer? A can in which flies cannot breed and then spread typhoid germs? A can having a cover which every time closes tight automatically—and cannot be opened by prowling dogs and cats? A can, which being out of sight, does not disfigure the back yard? A can which is practically indestructible? The Stephenson Underground Garbage Receiver has all these advantages.

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How much simpler, more economical, easier and more satisfactory to apply.

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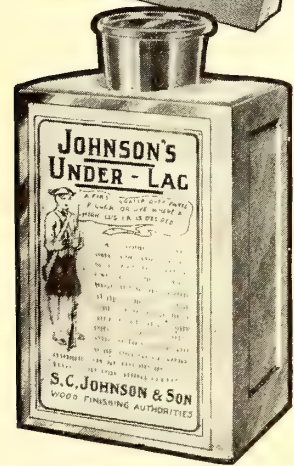
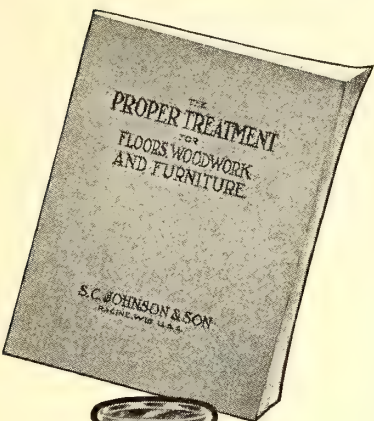
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THE RELATION OF THE AUDUBON MOVEMENT TO THE SPORTSMAN

BY B. S. BOWDISH.

THE true relation which Audubon societies bear to the sportsman of the country (and within the term I mean to include only *true* sportsmen), is very much misunderstood by a great many, among whom are some of the sportsmen themselves. While running the exhibit of the National Association of Audubon Societies at the Sportsmen's Show of the Forest, Fish, and Game Society, of America, in New York, recently, several visitors expressed surprise to the writer that the Audubon societies should be thus joining with sportsmen. They went away assured that instead of there being any antagonism, the most complete accord existed between true sportsmen and the Audubon organization. To some sportsmen inquiring as to the exact intentions of the Audubon societies, it was explained that they stood for the passage and enforcement of such laws as would insure the preservation of game, and for the absolute protection of harmless and beneficial non-game and insectivorous birds. In no case did this explanation fail to elicit prompt and hearty approval.

The real sportsman is a true protector of non-game birds. Their charm contributes greatly to the pleasure of his outings, and by them, in common with the rest of humanity, he is benefited in a practical way. In the matter of game, too, he stands for preservation, not for extermination, and his appreciation of actual conditions is far more accurate than that of the sentimental theorist, his sympathy more direct and personal. On the other hand, the cordial relation of the Audubon societies toward the sportsmen is shown by the results of their work. In North Carolina the State Audubon Society was in 1903 incorporated to perform the functions of a fish and game commission, and since that time has continued to serve the State with such general satisfaction to sportsmen and citizens that in February, 1907, the South Carolina Audubon Society was incorporated along the same lines. Alabama, a year since one of the worst States in the Union as to game protection, from which bobwhites were annually shipped by wholesale, early in 1907 adopted a bird and game law drafted by the most earnest and active Audubon worker in the State, and indorsed by the National Association, and the author of this law, John H. Wallace, Jr., was made Game Commissioner. As a result, the State, from being one of the most backward, has become one of the most progressive game protective States, and words of praise for the law and the Commissioner are heard on all sides from the sportsmen of the State.

Tennessee has now a very good game law, which the National Association of Audubon Societies was influential in securing, and Georgia, as a result of persistent effort on the part of the same organization, has greatly improved in this respect. In Texas, during the winter of 1906-7, Mr. Chas. E. Brewster, game law expert and ex-State Game Warden of Michigan, was maintained at very considerable expense by the National Association for the purpose of educating the people and assisting the able secretary of the Texas Audubon Society, Capt. Davis, and the sportsmen of the State in securing the enactment of good game laws and providing for their enforcement. The result has been the correction of very serious abuses and the



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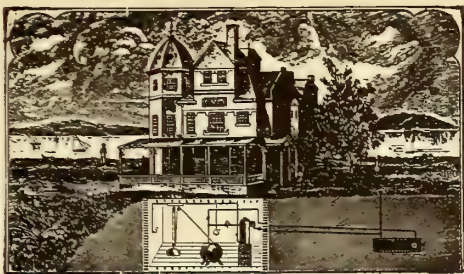
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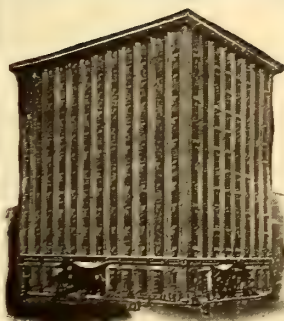
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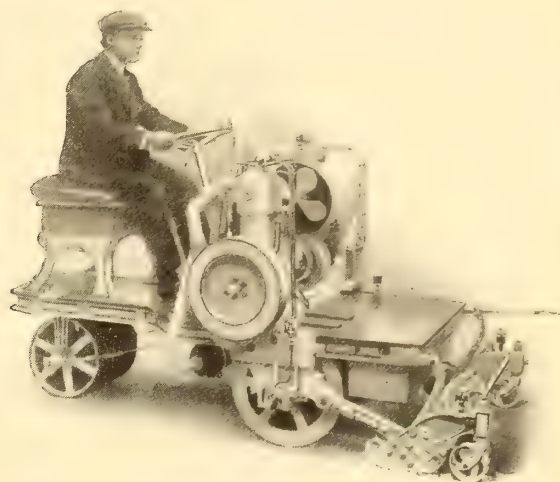
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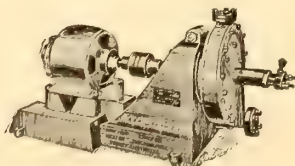
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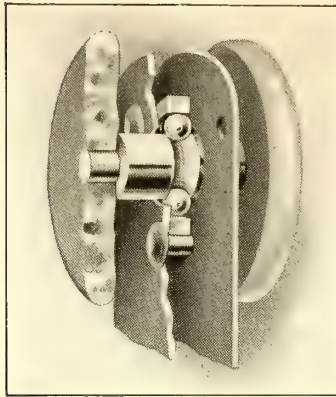
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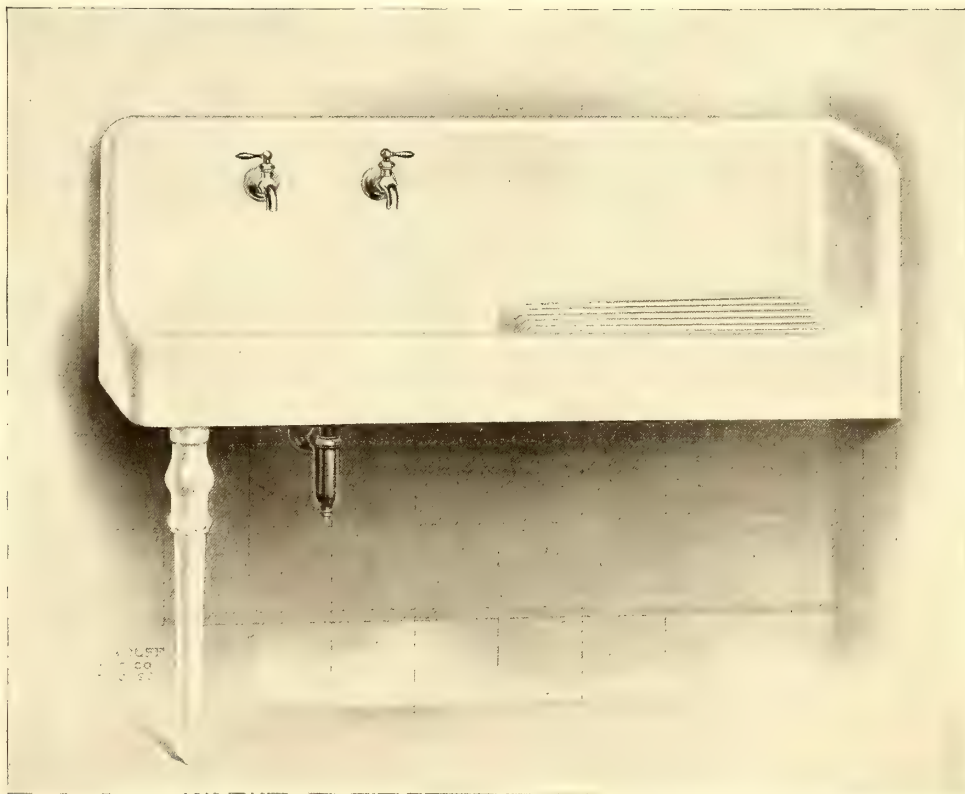
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establishment of bright prospects for the preservation of the State's game. In Connecticut during the last session of the Legislature the influence of the National Association and the Connecticut Audubon Society was most potent in securing the enactment of a hunter's license law, which has met with the hearty approval of by far the greater number of sportsmen. Then non-spring shooting law was also secured largely as the result of the efforts of these organizations. In Illinois the open season on woodcock and mourning doves has been shortened a month; the day's bag of waterfowl and ducks reduced from thirty-five to twenty, and for quail and other game birds from twenty-five to fifteen. In Massachusetts the National Association has contributed to the fund which is to be used in the experiment looking to the preservation from extermination of the remnant of the once abundant heath hen, now reduced to a few pairs on the island of Martha's Vineyard. In New Hampshire a law was secured making a five years' closed season on the wood duck and upland plover. In New Jersey the attempt last year to secure a non-spring shooting law resulted in the bill dying in the Senate Fish and Game Committee as the result of the opposition of one man. This year sportsmen have awakened to the conditions and necessities, and co-operation of the sportsmen's clubs is already so well assured as to give good promise of securing the passage of both this law and a hunter's license law.

One of the good works accomplished in New York has been the defeat of bills to permit the sale of certain foreign game birds in the closed season. These bills in various forms have been introduced at each session of the Legislature for several years. The adoption of such a law would almost surely result in fraud, and the illegal selling, consequently killing, of native game birds.

In a paper of the limitations of the present one, it is obviously impossible to more than briefly touch on some of the more important work looking to game protection: which the National Association of Audubon societies and the various State Audubon societies have accomplished in co-operation with the sportsmen of the country. As to the aims and principles of the National and State societies, they may be briefly summed up in a repetition of the statement that these organizations stand for the adoption and enforcement of such laws as will insure the continued preservation of all species of game, and for the absolute protection of all harmless or beneficial non-game birds and animals. They advocate the total abolishing of spring shooting, because by such wasteful methods many species of game are surely being brought to extermination; they advocate the adoption of a hunters' license, first because it places the cost of game protection on those who enjoy the sport of shooting, highest on the alien who is most frequently a violator of the game and non-game laws, next on the non-resident who does not otherwise contribute to the support of the State, and merely nominal on the resident sportsman, who is almost always perfectly willing to contribute to the support of his pastime second, because it enables the game commission to keep tabs on who does the shooting, legal and otherwise; they advocate non-sale of game, because while there is a market for game, worthless individuals who would rather make a precarious living by shooting than to work for it will violate all game laws and disregard all bag limits, and such men and merchants are a potent factor in game decrease; they advocate a closed season for a term of years on such birds



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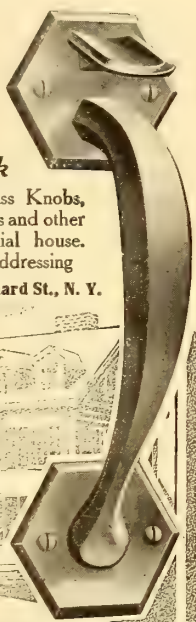
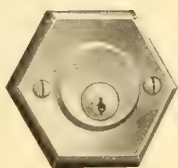
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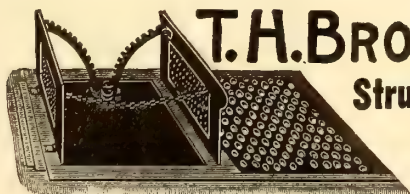
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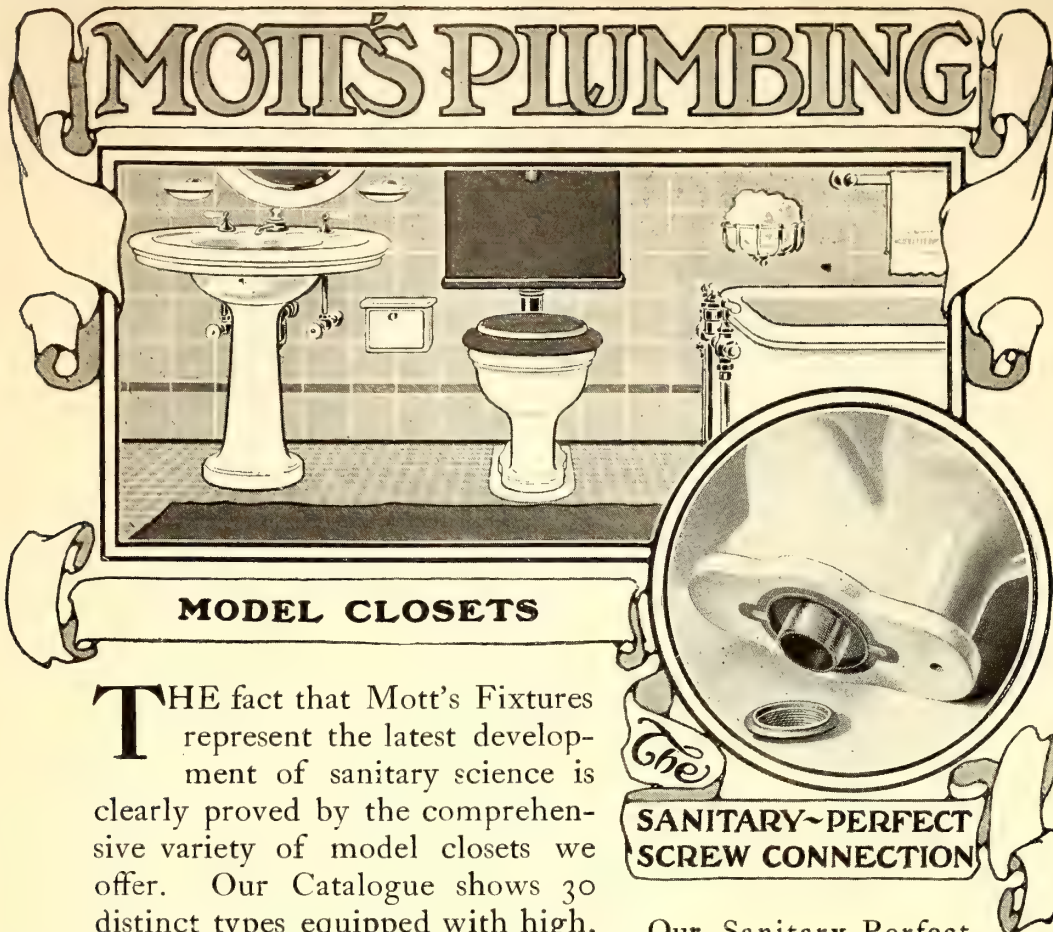


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as the wood duck, woodcock, and upland plover, which, sadly reduced in numbers, are threatened with extermination unless thus given a chance to recuperate. In the case of the wood duck, several hundred letters sent out by the association a few months since to prominent ornithologists and sportsmen throughout the country, asking the present status of this bird, elicited replies which almost without exception were to the effect that the bird had either entirely disappeared or had become exceedingly scarce in the locality of the writer, and it is a question if the case of the woodcock and upland plover is not even more desperate.

The methods by which the objects of the Audubon societies are sought to be obtained are: education of the people as to the economic and æsthetic value of the birds and wild creatures; legislation, the advocacy of good laws and opposition to bad ones; the employment of wardens to guard breeding colonies of birds. Their fellowship with kindred organization is international, and their active assistance as far extended as the Bahamas and to the Game Wardens of Prince Edward's Island. Sometimes sportsmen whose viewpoint is restricted by the limits of local experience and knowledge are inclined to disagree with some of the reforms advocated by the National Association, whose experience and knowledge of game matters covers the entire country. A non-spring shooting law does not always appeal to the sportsmen of a State when the neighboring States have no such laws; they forget that a beginning must be made somewhere, that simultaneous action by a number of States is almost impossible of achievement. However, the wider a sportsman's experience, the more completely do his views accord with the aims of the Audubon societies.

Practically, the Audubon movement came into the field when there was almost no protection of non-game birds, when some of the most valuable insects and weed-seed eating birds were slaughtered wholesale, when the seabirds were being fast exterminated for the millinery trade, and many States had almost no game laws, while the laws of others were a mere farce, owing to non-enforcement. To-day model non-game laws are in force in thirty-eight States, and game laws are far better and better enforced than ever before, and tend constantly to improvement. This is largely the work of the Audubon movement, and it is no wonder that it meets with the hearty appreciation of sportsmen and nature lovers everywhere.

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HISTORY OF SANITATION. By J. J. Cosgrove. Pittsburgh: Standard Sanitary Mfg. Co. Pp. 8-122. Price, \$1.50.

The historical aspects of sanitation have somewhat been lost sight of in the numerous treatises on this most practical of subjects, and Mr. Cosgrove has, therefore, in this beautifully printed volume, opened a quite new topic that is completely his own. It was a happy thought to sum up the history of this important subject, and the author of this book has done so in a peculiarly interesting manner. He starts his readers almost with the beginning of the human race, and in a rapid sketch carries them down to the marvellous advances of our own day. The interest of the story is enhanced by the illustration, many of which are of deep historical interest.

THE FIRELESS COOK BOOK. By Margaret J. Mitchell. New York: Doubleday Page & Co. Pp. 12-313. Price, \$1.25.

Of the making of cook books there is no end, and very useful many of these complications are. The spread of the fireless cookstove in the last few years has necessitated a modification of many of the older authorities, and in the present volume an offering is made of two hundred and fifty recipes for preparing food by this latest of cooking devices. Food, of course, is not cooked entirely without fire; but the fireless stove has proved that the continuous fire is not essential to ordinary cooking. It is quite necessary to know how to use this apparatus, and Miss Mitchell not only makes this clear, but tells what may be done with it. The book is eminently practical, and those who wish to experiment with this latest of cooking methods will find it both convenient and reliable.

A REPORT UPON THE MOLLUSK FISHERIES OF MASSACHUSETTS. Boston: Commissioners on Fisheries and Game. Pp. 243.

This report has been prepared and published with the fine regard for scientific accuracy and lucid presentation that characterizes so many of the government publications of the State of Massachusetts. It is limited to a statement of the condition of the shellfish in each section of the Massachusetts coast and to the consideration of practical methods for securing increased opportunities for food and livelihood by better utilization of naturally productive lands under water. Prepared, as it is, by competent specialists, the report has great scientific value as well as practical utility. The value of the text is augmented by numerous outline maps and by photographic illustrations. It is a model public document in many ways.

PROCEEDINGS OF THE CONVENTION AT WHICH THE AMERICAN FEDERATION OF ARTS WAS FORMED. Washington: Pp. 175.

This well-printed pamphlet records the proceedings at a notable convention of art societies held in Washington last May at which the American Federation of Arts was formed. Men, distinguished and otherwise, and women as well, took part in this convention, which was well attended and from which promising results are to be



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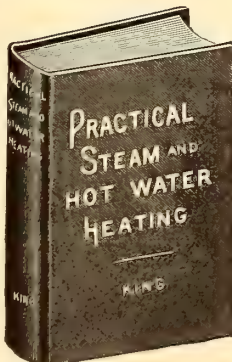


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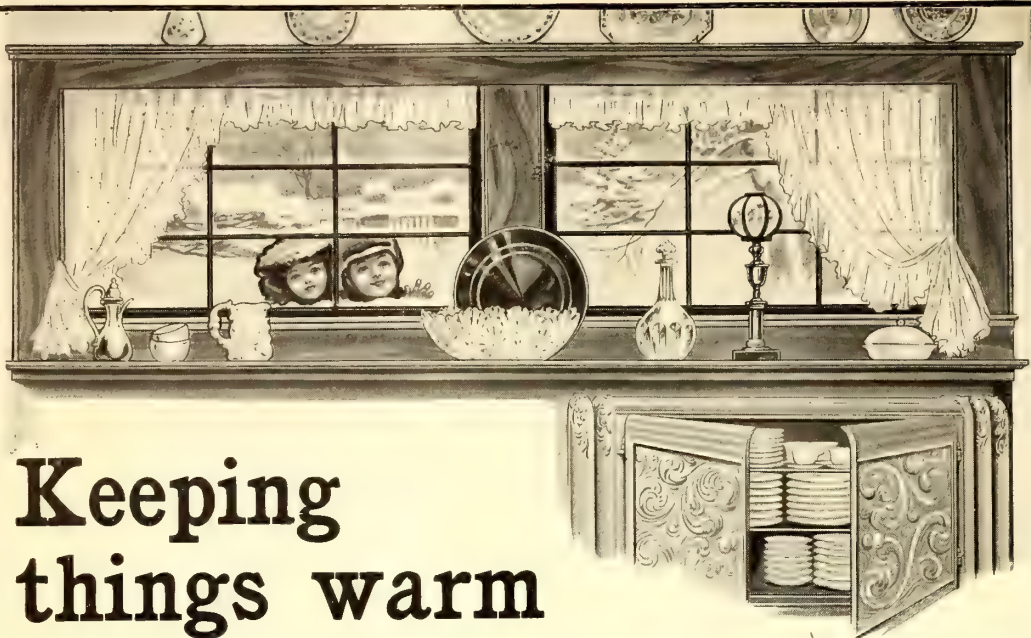
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expected. The getting together of artists and non-artists has not always proved a success in New York, but better counsels may prevail in the national organization, and all friends of art must hail this new organization with a greeting and wish it success. The record shows that the convention was a most interesting and animated one, and a permanent statement of its doings was well worth making.

THE STUDIO YEAR-BOOK OF DECORATIVE ART, 1909. New York: John Lane Co. Pp. 163. Price, \$3.00; postage, 35 cents.

A new system of presentation has been chosen in the preparation of this annual volume. Descriptions of the objects illustrated are omitted, and instead there are given brief biographical notices of the various artists whose craft work has been chosen for publication. It is interesting to know who these people are, where they live and what have been their most notable achievements; yet in a work of this sort there is ample room for descriptive notes, information as to color and material and the like that is missing from the present volume.

But the creative value of this annual review is still at the high water mark set by earlier issues. The illustrations are most abundant, and cover many forms of decorative art. It is, in short, a most impressive survey of the progress of modern art, and designers and art lovers may well regard it as indispensable. The volume is beautifully printed, and the illustrations include many exquisite plates in color. It is a book that cannot well be too highly commended.

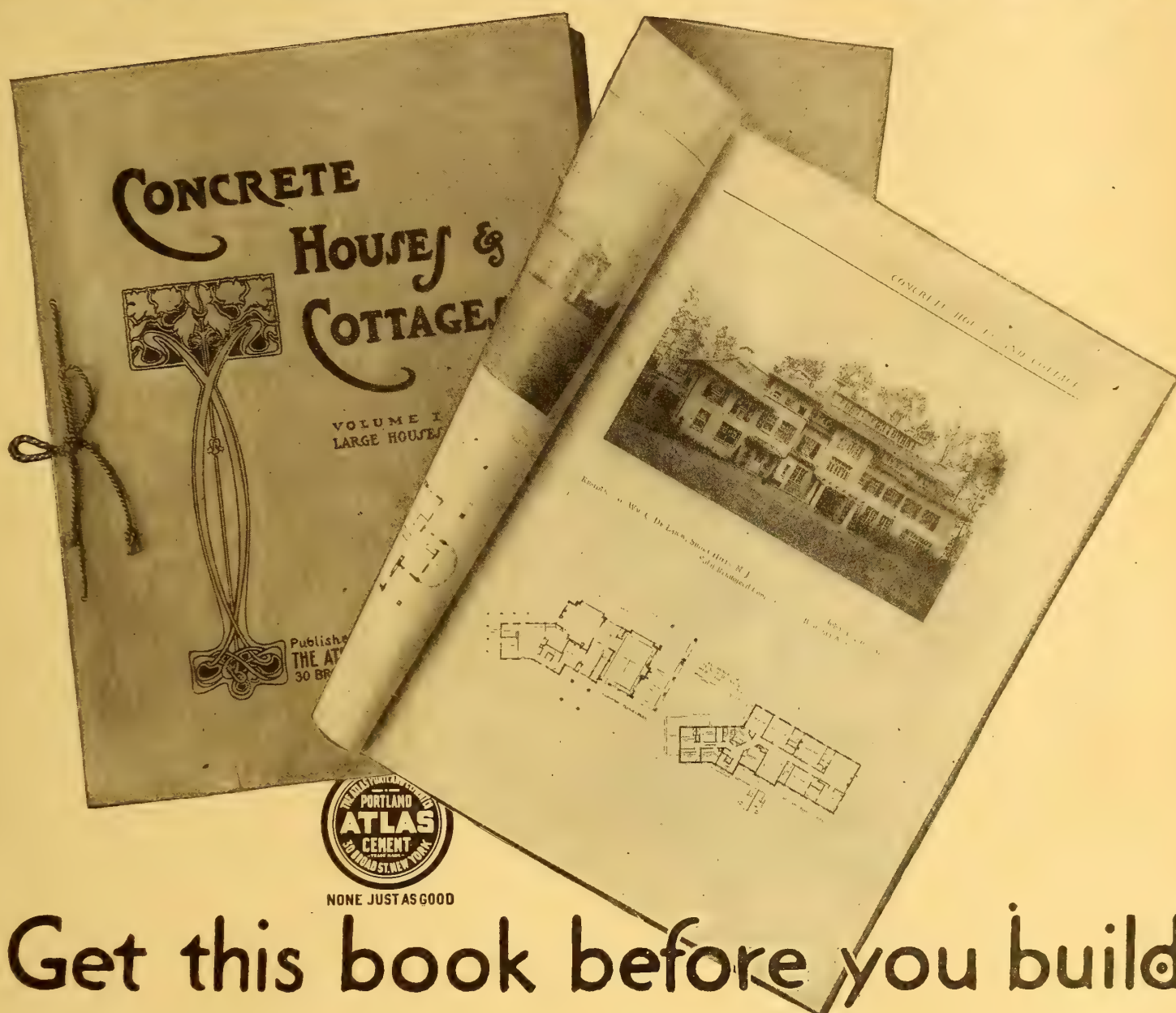
STAINED GLASS WINDOWS IN ENGLAND, By Charles Hitchcock Shirrel. New York, 1909: J. Lane & Company. 12mo. Pp. 254. Price \$2.50, net.

This admirable book is a rational guide to the study of stained glass in England. It is accompanied by maps which show how the cities may be visited in their proper sequence with as little fatigue and crossing one's path as possible. Not only are the many noble cathedrals visited but smaller religious edifices and secular buildings of many types are treated. In this latter category are treated the Universities of Oxford and Cambridge and one of the finest of the stately homes of England, the Knole. Any cultivated person who completes the tours as outlined will have obtained a well rounded impression not only of glass but also of history as well as intelligent accounts of customs of England. Unfortunately no form of illustration can hope to reproduce the combination of light and color which makes up the beauty of stained glass. Those selected by this book are the best obtainable, but are chiefly useful in showing how the windows are set. It is not a technical book so that scale drawings are not required. It is a beautifully printed and bound book.

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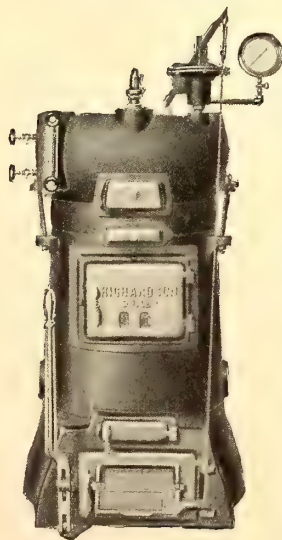
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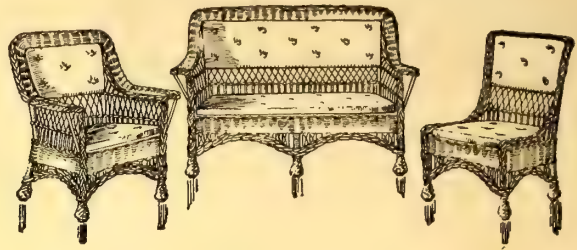
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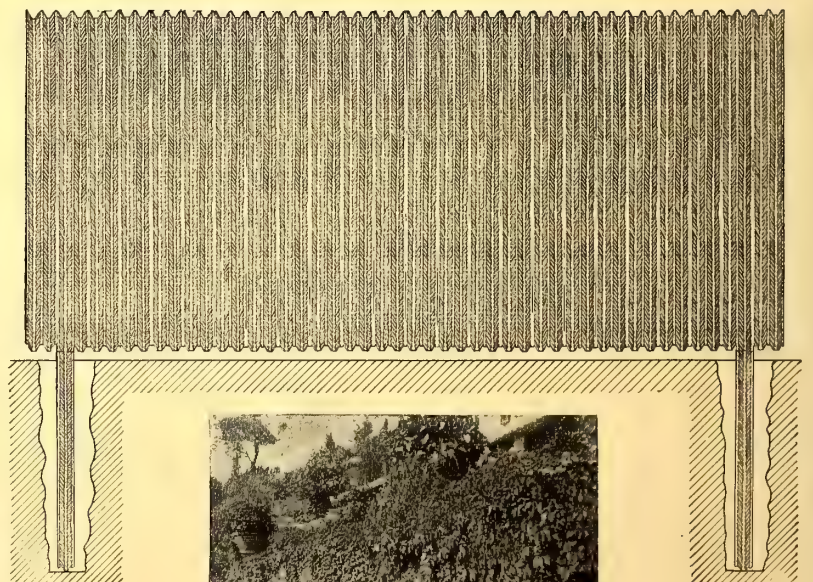
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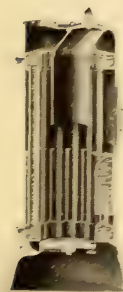
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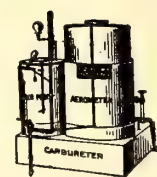
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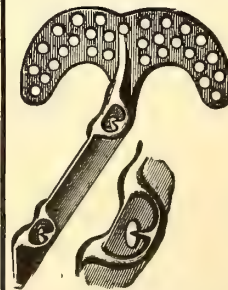
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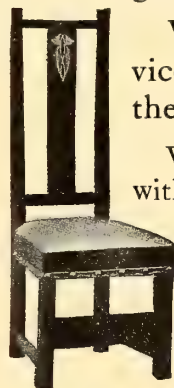
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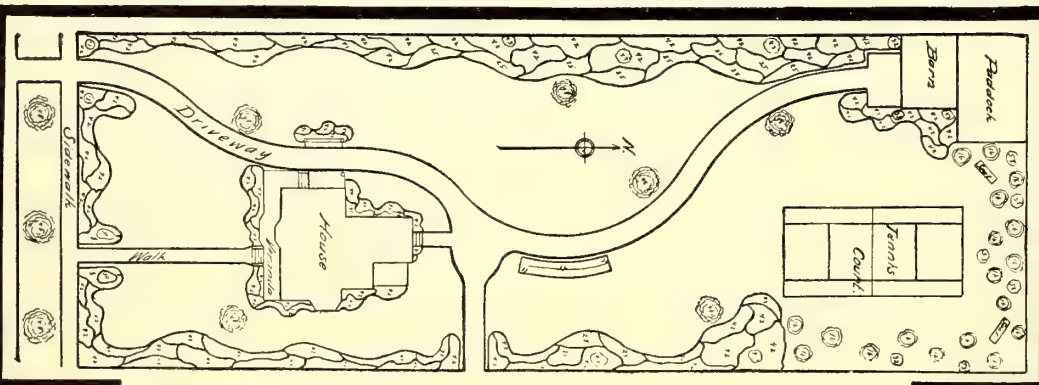


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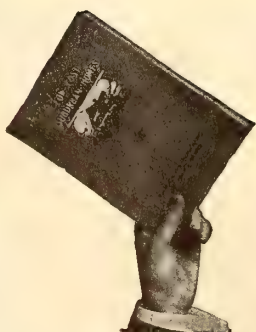
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ANNUAL SMALL HOUSE NUMBER

THE May number of AMERICAN HOMES AND GARDENS will be devoted to the small house, its building, its decoration, and its furnishing. This issue will contain a vast amount of valuable information for the prospective home-builder. It will tell him how to select a country site; how the various rooms of the house should be planned; the style of architecture in which the house should be designed; the material of which it may be built; the kind of plumbing fixtures to be used; the heating system to be selected; the choice of the hangings for the walls, doors and windows; appropriate furniture for the home; the interior decorating and furnishing of the home; the furnishing of the Colonial house; the furnishing of the Arts and Crafts house; the furnishing of the porch; the furnishing of the out-of-door living-room; how to plan the small kitchen; how to plan the garden; how to build a pergola; and how to lay out the grounds about the house, as well as the planting of them.

Special attention will be given to the subject of inexpensive and small houses; the most numerous erected dwelling in America, and the type of house that at once excites the widest interest and offers the richest field for suggestive helpfulness.

The various departments conducted by specialists add greatly to the value of this number, and the aim has been to bring out the charm of the simple, beautiful things which contribute to domestic comfort and happiness, solely for the purpose of solving the problems which confront the houseowner, but which cannot be done without the assistance of a competent expert. Besides these departments, the magazine will contain a host of articles that must inevitably stimulate the desire for home improvements.

The table of contents published on page ix in the current issue will give a synopsis of the contents for the May number of AMERICAN HOMES AND GARDENS

FURNITURE FOR THE HOME

BEGINNING with the current issue of AMERICAN HOMES AND GARDENS, Esther Singleton will take charge of a Furniture Department for this paper. The objects of this Department will be to bring before the householder of moderate means the style in vogue for furnishing the various apartments of a house; to offer practical suggestions for the purchase and arrangement of furniture, and to aid a small collector of old styles and forms of furniture. Miss Singleton is an author of international reputation, and her books on "The Furniture of Our Forefathers," "French and English Furniture," and "Dutch and Flemish Furniture," are too well known on both sides of the Atlantic to require any comment further than that her serious study of the subject, and her experience as an author, make her qualified to give the best advice on the proper furniture for the home, and this series of papers will be valuable to anyone.

THE T-SQUARE CLUB EXHIBITION

IT IS particularly interesting to learn that the T-Square Club of Philadelphia has announced that its Sixteenth Annual Exhibition this year will be devoted to domestic architecture. Invitations have been sent to every architect in the country, with a request for them to submit drawings or photographs of completed work, with the view of hanging them in the galleries of the exhibition.

The realization of the importance of such a measure by the T-Square Club is entirely in accordance with the view expressed in the editorial columns of the March issue of AMERICAN HOMES AND GARDENS, in regard to the lack of domestic architecture shown at the recent exhibition of the Architectural League of New York, and it is certainly gratifying to know that an architectural organization occupying the important position which the T-Square Club does in this country should take the initiative in this direction.

It is to be hoped that the committee in charge of this exhibition will receive a hearty response to its appeal, and that, in order to secure a more popular exhibition, and one that will be a benefit to a larger number of laymen, will have the co-operation and support of the architects throughout the country.

DECORATIONS AND FURNISHINGS FOR THE HOME

THE Editor desires to announce that a series of articles on "Decorations and Furnishings for the Home" will appear in AMERICAN HOMES AND GARDENS. This subject is of the most vital importance to every one interested in the creation and development of a home. The author of these articles, Alice M. Kellogg, is a well-known New York decorator, who has created a new field in the profession by utilizing the most tasteful furnishings and decorations obtainable at a minimum expenditure. This economic point of view will be a feature of the series, while the practical and artistic will not be overlooked. So far as is possible there will be estimates, and prices given, with suggestive ideas not only for the introduction of the newest devices of interior decoration, but also for the improving and harmonizing of existing conditions.

AUTOMOBILING

OWING to the importance of the automobile in relation to the country home, the publishers have decided to open a department on this subject in AMERICAN HOMES AND GARDENS.

The first paper, which appears in the current issue, is devoted to the closed car, and is prepared by Stanley Y. Beach, the Automobile Editor of the "Scientific American."

Each issue will contain an article on a special class of car and its equipment, and the latest advice and information on the subject, which should be helpful to those who are interested in the purchase and use of an automobile.



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HOW TO EMBELLISH CHEAP FURNITURE

TO every professional cabinetmaker the problem has doubtless been already presented of making cheap furniture, which, in spite of the lowest price, should present to the eye a pleasing appearance. Carving or tarsia (inlaid) work cannot, of course, be thought of in this connection, as these would materially raise the price of the furniture. The following procedure will, accordingly, enable the joiner to decorate the furniture in a beautiful and appropriate way without the necessity of enlisting therefor the aid of other professional artisans.

Every joiner is expected to have had some practice in drawing and to be capable, therefore, of getting up designs for the decoration of panels, front-pieces of drawers, etc. This drawing he has, accordingly, to transfer by means of tracing-paper upon the portions of wood to be decorated and to fill the ornament or the ground, according to the effect intended, with gum arabic. The gum must not be too weak in order that it may properly cover the parts smeared, and must also be entirely colorless, for otherwise the wood becomes stained. Then, after having allowed the parts to dry for a day, the panels, etc., should be rubbed by means of a woollen rag vigorously, though sparingly, with printers' ink previously diluted with a little petroleum, so that the wood may receive a uniform coloring. This ink can be obtained in all shades and one may therefore choose the tint which shall harmonize with the given stain of the wood. The whole must then be wiped off with a sponge, whereby the gum is dissolved and the parts that were covered remain standing out with distinctness. The gum must, of course, be entirely washed off and particular care should be given to this point.

If the ground has been rubbed in, the ornament being in that case left untouched, then it becomes an easy matter to color the same with ordinary water-stain, inasmuch as the printers' ink, by reason of its fatty contents, does not take any water staining. The furniture is now treated as usual—either waxed or polished; whereby the fatty nature of the ink renders very good service.

For such manner of ornamentation only light woods are, of course, adapted, such as fir, pine, ash, maple, oak, etc., while walnut or mahogany, on account of their dearth, do not even come into consideration for simple furniture. By the designing of the ornament much depends upon a proper distribution of the same. Very poor and monotonous would be the effect of filling the given surface with it completely. It is just in limitation and the happy selection of the place where the ornament is suited that one shows himself a master. Above all will those places have to be decorated which first catch the eye, or are especially conspicuous because of their monotonous lines. In case of a door, which, perhaps through a desire of saving a framing piece, has been given a very long panel, it will be commendable to set off the upper quarter of the same by means of an ornament. The bounding lines of the latter need not, however, run exactly parallel to the framing of the panel, but a somewhat greater freedom of form may be allowed here.

It is likewise of great importance to consider that one and the same ornament has a different effect according as to whether the ground executed in dark and the ornament light, or vice versa.



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"THE HOUSE BEAUTIFUL" is a magazine which no woman interested in the beauty of her home can afford to be without. It is full of suggestions for house building, house decorating and furnishing, and is equally valuable for people of large or small income.

ELLEN M. HENROTIN,
Ex. Pres. Nat. Federation of Women's Clubs.

Its readers all say it is a work remarkably worthy, thorough and useful. The magazine costs \$3.00 a year.

But to have you test its value for \$1.00, we will send you the current number and "THE HOUSE BEAUTIFUL" Portfolio gratis, on receipt of the Five Months' Trial Subscription coupon. The Portfolio is a collection of color plates and others of rooms in which good taste rather than lavish outlay has produced charming effects. The Portfolio alone is a prize which money cannot ordinarily purchase. Enclose \$1.00 with the coupon filled out and send to

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Garden Competition for 1910



The Garden in Your Town



THE publishers of American Homes and Gardens desire to announce a Garden Competition for 1910, and will offer \$100 for the four best planned, developed and successful suburban or village garden. The Garden Competition Editor of American Homes and Gardens wants to know if your garden is a success. If so, write and tell him about it. Tell him how you planned and how you planted your garden, and what success you had with it; tell him of the plants with which you had the best results and the ones which were failures; how you arranged for a succession of bloom; how you made use of the natural limitations of the plot and what mistakes you made. We want you to help us so that we may help others to beautify their surroundings, for this is the object of this competition. You need not be a skilled writer to tell the story of your garden success. Tell it in your own way.

\$100.00 for Prizes

For the best garden received we will pay :

For the first	-	\$50.00	For the third	-	\$15.00
For the second		\$25.00	For the fourth		\$10.00

Conditions

Competitors for the prizes must comply with the following conditions :

- 1 A general description of the garden, consisting of not more than fifteen hundred words, giving the size of the plot and the kind of plants used in planting, must be submitted. Give any details which you think will be of interest.
- 2 Drawings of the plot are to be made in black and white, drawn to the scale of eight feet to an inch, showing the position of the various plants and shrubs. Name each variety of plant on the plan by a number, giving a separate list with a corresponding number by which each plant may be identified.
- 3 Photographs of the garden must be submitted. It will be of interest to send as many photographs of the garden, taken from as many points of view and at different times in the summer, as illustrate the changes in the garden's appearance to the dominance of certain flowers. The photographs must be printed on printing-out paper and are to be not less than five by seven inches in size. A photograph of the site of the garden before it was developed would add interest to the series.
- 4 Descriptions, drawings and photographs are to be marked with a pseudonym which is to be enclosed in a sealed envelope containing the name and address of the competitor. All descriptions, plans and photographs are to be sent free of any name or address on them except the pseudonym. Express or postage charges must be fully prepaid.
- 5 Just as soon as the judges have rendered a decision upon the four best gardens submitted for this competition, they will notify the Editor who will open the envelopes bearing the pseudonym and containing the competitor's true name, and will at once notify the successful competitors that they have won the prizes.
- 6 The Garden Competition Editor reserves the right to publish in American Homes and Gardens all prize gardens and those gardens which in the opinion of the judges are worthy of honorable mention. The names of those whose gardens are reproduced will be published with the photographs.
- 7 Contributions are to be submitted to the Garden Competition Editor, American Homes and Gardens, Munn & Co., Publishers, 361 Broadway, New York.
- 8 The garden competition closes September 15, 1910. Contestants need not to be subscribers to American Homes and Gardens, and no charge or consideration of any kind is required. No photographs, manuscript or plans will be returned.



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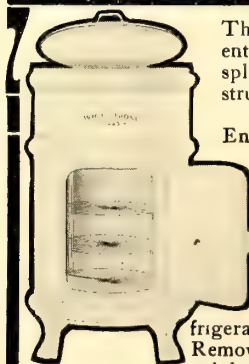
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American Homes and Gardens for May



The Modern House from the Atlantic to the Pacific

This is an article treating of the development of the modern house as seen in various parts of the country, and the group of five houses presented represents the best type of modern house built at five different points. The article is described by Francis Durando Nichols and is illustrated by photographic views of the exterior and interior of the houses as well as the plans.

How to Build a Pergola, and a Garden Seat

A. Russell Bond tells in an illustrated article how it is possible for an amateur to build a pergola for a small garden. He shows photographic views of a pergola and a garden seat, and also working drawings which may be used in carrying out the subject in accurate detail.

Ideas for Colonial Furnishings

Very few understand the significance in furnishing a Colonial house in its truest sense. Mary Livingston, who has made a special study of this subject, presents an article on how to furnish the various rooms of the Colonial house, including the hall, drawing-room, library, dining-room and bedroom, which is profusely illustrated with views showing the best examples.

Furniture for the Home

The second paper by Esther Singleton will be devoted to porch furniture for the small house. The porch of the small house frequently finds itself the resting place for the various kinds of chairs removed from different parts of the interior rooms. This condition is unfortunate, for it not only disfigures the house, but is one that can be avoided by a very small expenditure of money. Miss Singleton tells how this may be done, with illustrations showing the kind of furniture that is appropriate and the cost of the same.

The Small Kitchen of Today

There is no part of a house which receives so little attention and yet requires so much, as the kitchen. Mr. Robert Spencer, Jr., has prepared an interesting article on its planning and equipment, which is well illustrated with numerous plans showing the proper arrangement of the kitchen in relation to the other rooms of the house. All good housekeepers realize the importance of this subject, and no one is better qualified to give such information than Mr. Spencer, who has made the kitchen and its dependencies a special study.

The Out-of-Door Living-Room

Now that we are coming to the warm season of the year, our thoughts dwell upon getting out of doors, and there is no more important feature of a house which should receive proper consideration than that of the living-porch. Mr. John A. Gade has prepared a very interesting article treating upon this timely subject which is profusely illustrated by photographic views showing the various ways by which a porch may be furnished and enclosed with screens in summer, and with glass in winter.

Some California Bungalows

The California bungalow is always interesting and Helen Lukens Gaut has prepared an article on this subject, accompanied by illustrations of eighteen bungalows costing from \$150 upwards. The bungalow is always interesting to those who want to live out of town during the summer months, and when one can learn from this article that it is possible to obtain a bungalow at so low a cost as \$150, it should become very interesting.

Planning the Small Garden

Loring Underwood, the well-known author, tells in a very pleasing way how it is possible to plant a small garden. The article is illustrated with drawings showing how the garden was planned and photographs showing how it has been developed. He tells of the kind of plants to use, and those from which the best results are obtained.

Automobiling

Stanley Yale Beach, the automobile editor of the *Scientific American*, tells in a practical way how it is possible for a man to have and maintain a small motor car. The article is illustrated showing automobiles costing from \$700 to \$1,000.

Pottery Making for the Amateur

Everyone is interested in pottery making, especially the kind of pottery making which can be done by the amateur. Mabel Tuke Priestman presents in an illustrated article views that show some of the most beautiful pottery made in America.

Furniture for the Arts and Crafts House

Furnishing the arts and crafts house is a subject which is very well presented by Edith Haviland. Miss Haviland takes one through the house, beginning with the hall, and ending in the bedroom, and shows the proper furniture and treatment of the rooms, comprising the hall, library, living-room, dining-room, and bedroom.

Decorations and Furnishings for the Home

Alice M. Kellogg presents her third paper, which is devoted to wall-papers and cretonnes. This article is illustrated with photographic views showing the combinations of wall-papers and friezes, in combination with the same design and pattern for the curtains to be used at the windows and the spreads to be used upon the bed and couch of the sleeping-room.

The Use of Cement in the Building of the Suburban House and Garage

The widespread interest in the use of cement in the building of the suburban house and garage inspired the idea which forms one of the important features of this number.

Mr. Robert W. Gardner, a well-known architect, who has made a special study of the use of cement, has prepared a very excellent article on the subject which is profusely illustrated with many fine engravings.

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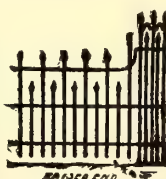
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CONTENTS FOR APRIL, 1910

	PAGE
"SPRINGTIME"	Cover
A GOOD PLACE FOR ROCK PLANTS	Frontispiece
ROCK GARDENS	By Charles Downing Lay 123
THE HOMES OF FOUR ARCHITECTS IN THE MIDDLE WEST.....	By Francis Durando Nichols 127
DECORATIONS AND FURNISHINGS FOR THE HOME—The Window Curtain	
	By Alice M. Kellogg 132
THE SUMMER HOME OF E. C. STANWOOD, ESQ., Kennebunkport, Me....	By Henry Hawley 134
FURNITURE FOR THE HOME	By Esther Singleton 136
AUTOMOBILING—The Closed Car.....	By Stanley Yale Beach 138
AN INTERESTING GROUP OF STUCCO HOUSES, COSTING FROM TWO THOUSAND DOLLARS	
UPWARDS	140-141
THE GOBELIN TAPESTRY WORKS.....	By Frank Brown 142
WINTER DISEASES OF HOUSE PLANTS	144
FURNISHING THE APARTMENT—IV. The Bedroom	By Lillian Hamilton French 145
THE HANDICRAFTSMAN —A Combined Grandfather Clock and Book-Case	
	By A. Russell Bond 148
THE RESIDENCE OF STEPHEN L. BARTLETT, ESQ., Chestnut Hill, Mass....	By Paul Thurston 149
GARDEN NOTES	By Charles Downing Lay 153
THE EFFECT OF COLORED LIGHT ON VEGETATION	By Jacques Boyer 154
A NOVEL METHOD OF GROWING POTATOES	By S. Leonard Bastin 156
A PROTECTED GRAPE-FRUIT GROVE IN FLORIDA.....	By C. M. Berry 158
THE HOME VEGETABLE GARDEN	By E. P. Powell 159
THE DOUBLE FLOWERING CHERRY	By D. Z. Evans, Jr. 160
Garden Competition for 1910	American Homes and Gardens for May
Editor's Note-Book	Correspondence
The Production of a Black Color on Brass	Pepper Cultivation in India

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A good place for rock plants.

AMERICAN HOMES AND GARDENS



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Rock Gardens

By Charles Downing Lay.



ROCK gardens are more common and better in England than in America, or seem to be, if one can judge by the many excellent photographs in English books and periodicals. It may be because all gardening is easier in that moist climate, but chiefly, I think, because English people care more for gardening than we, who "love flowers," though not enough to spend much time or thought in growing them.

The delight in gardening is a different and more serious and active passion than the love of flowers, and the last and highest expression of this delight is perhaps rock gardening, which demands all one's skill and knowledge, besides much patience and taste. It is more continually

absorbing than the growing of roses, for instance, because the season is much longer, and the triumphs greater and less often attained.

Anyone with some intelligence and much persistency can grow roses, but it takes much more than that, something akin to genius, to grow the rare plants of a rock garden.

Cabbages and roses are similar horticultural triumphs, and in perfection, appeal to like natures, though in different strata of society!

Rock gardening, on the other hand, appeals to a smaller number of people, who are more sensitive to the delicate charm of uncommon flowers. It is intimate and personal; it must be done by hand, so to speak, and the labor is light, though the time actually given to it may be considerable.



Lawn of the Rock Garden at Wellsmere.



A rock garden which needs more grass and more paths.



A rock garden insufficiently screened.

No one who can move about out of doors is too much of an invalid to enjoy the care of a rock garden, and no one who has ever had such a care, is willing to give it up to a gardener. It is too full of detail; on too small a scale for any hired gardener, trained to grow roses and cabbages, to care for, unless he too be an enthusiast and the garden is to be his and not your own. It is like golf: if you would enjoy the game you must play it yourself.

The compensation for all this personal attention is a knowledge and keen enjoyment of the smaller and more beautiful flowering plants, things not commonly seen, and which must

be seen close at hand, as they are in a rock garden, to be fully enjoyed.

Many of the plants which can be grown there are nearly impossible to grow in other places, because they cannot endure crowding, or because they must have special and peculiar conditions provided for them. Many are above ground but a few weeks in each year, and in the large flower garden would inevitably be lost. They are often rare, and come in poor condition, and must be nursed for a year or more, by shifting to different positions, trying different soils, until they become established.



Path in a rock garden.



Steps in a natural ledge.



The stone table and seat.



A good place for a rock garden.

Physically a rock garden is an attempt to provide each plant with its natural environment, and this means approximations varying from a temperate desert to an alpine summit.

The term rock gardening may include alpine gardening, though strictly alpine plants need a moist atmosphere and a heavy cover of snow throughout the winter. Here our dry summers and winter thaws, followed by zero weather, are against the successful growth of most alpines, which at the best are finicky. *Gentiana aucaulis* is a typical example, of which its variety *Kochiana* is said to "require a compost of one-third

crushed granite, one-third heath soil, and one-third vegetable loam, and should be planted on rock work half exposed to the sun. It dislikes lime." A careful soil prescription which might not save the patient's life.

The rock garden should be on natural rocks. Ugly piles of stone (rock work) on the lawn can never be a rock garden or anything but an eyesore. As a substitute for a natural ledge, large stones can be arranged in a sloping bank with some success in the imitation of natural conditions, as shown herewith in the plan and sections of a rock garden. Rough stones should be used rather than smooth boulders,



A lost opportunity.



Excellent planting in a rock garden.

and they must be firmly imbedded in the earth so as to form small and deep compartments or pockets. Each compartment must have loose stones in the bottom, for drainage, and must be filled with good earth sloping on the surface so that no water can stand on the ground in winter, but sloping so little that the beds will not wash or fail to soak up the water which falls on them in summer. Little of the stones should show when the planting is finished. The appearance should be rather that of an outcropping ledge covered with plants, than a pile of stones with plants growing between them. The artificial rock garden may start in the open and lead through a glade with trees on each side to give shade, but so far away that their roots cannot reach the beds. A natural glade with a brook would be a lovely place for our garden.

The rock garden should never be seen next to a lawn. It is too fussy and lacks the repose which is necessary in the boundaries of a lawn. It should be hidden by shrubs such as rhododendrons, kalmias, azaleas, and the common juniper (*juniperus communis*), with the Mugho pine, the yews and some of the slow growing or dwarf spruces. These will all form a background for the rock garden and increase its isolation from the rest of the place. The rock garden is so different from ordinary features of a place that it will look trivial and messy unless the contrast be made complete by isolation.

Turf walks with stepping stones for dewy mornings are nicest. There should be several rough stone seats—a stone table and a bird bath. A very small lawn not more than fifteen feet wide will be pleasant to sit on in warm weather and in the spring it will be full of crocuses and squills.

Running water and a rude pool, partly hidden by a large rhododendron, perhaps, will give moist air and shade for ferns, and various little mosses. In this one can fill the watering pot, or plunge the flowers while they wait to be taken to the house. A pool for aquatics would not be good. Aquatic plants are too luxuriant and coarse to be in harmony with delicate things in the rock garden.

A fireplace, if roughly built, might be one of the permanent features of the rock garden, and will be most convenient if near the table, as it will probably be used for boiling the tea kettle or making toast or simply for warming one's toes in winter. Charcoal or hard wood shavings make a quick and hot fire, much better for outdoors than an alcohol lamp.

If a natural ledge is to be used it should be stripped of

all vegetation and soil. Then the loose stones can be taken up and arranged to make the pockets or depressions deeper and to provide better drainage. Taking up the soil is necessary so that one can see what the depth of pockets is and thus determine what to plant in them. One must not waste a deep bed on drought resisting plants, nor plant things which need moisture in a shallow bed.

It should be a rule that no plant must depend on watering to live, even in the longest drought, though water to increase the luxuriance of growth may be desirable! A hose connection will be very useful.

The plants which can be grown in a rock garden are very numerous and there should be flowers there throughout the season, from the earliest snow drop or winter aconite to the last autumn crocus.

There are many small shrubs which should find a place in the rock garden. Dwarf Rhododendrons, Daphnes, Hypericum, Ledum, Pieris, Azaleas, will all do well and add much to variety of color and form.

Of the ferns and bog plants which can be grown on rocks that are naturally wet and shaded, it is impossible to speak in this

short paper, but the possibilities in such a place are unlimited.

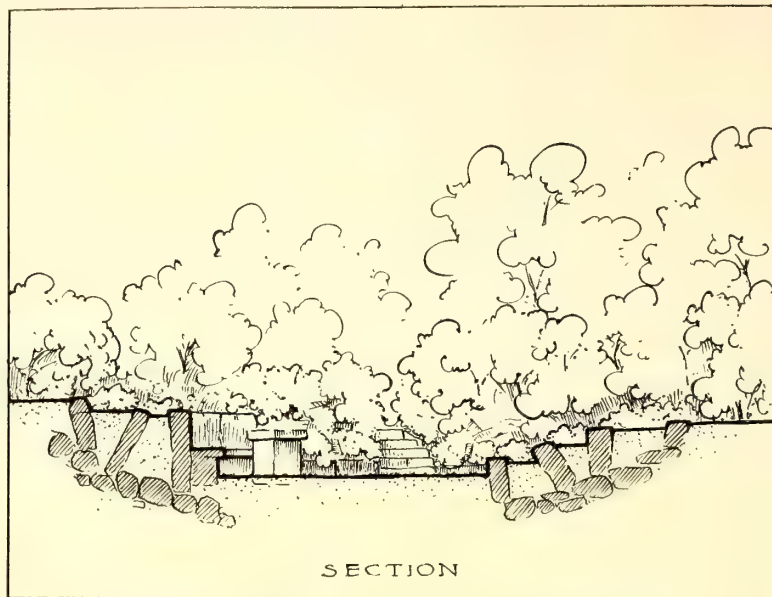
The rock garden should be carefully located on the way to some frequented place so that one will not fail to visit it several times a day, no matter how deeply engaged in other work. In such a place a few minutes can be stolen for weeding, or simply for visual enjoyment, which might not be possible if a special trip were necessary.

My rock garden is on the way to the flower garden and vegetable garden, and is not much out of the way to the motor house, besides being the pleasantest place for afternoon tea, which is served on the low stone table, so we are often there, and almost always when passing through I stop to pull up a weed or two, or to pick some

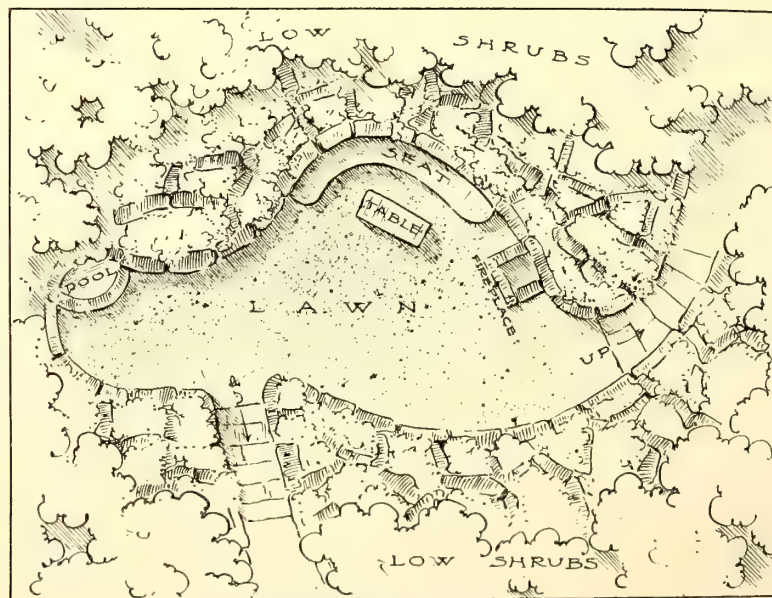
flowers. Sometimes in the cool morning before breakfast the sun shines pleasantly there, and I may spend a half hour fussing with things—the keenest pleasure of the day!

Doing the work in this way it ceases to be work, and there is never a time except in April and September when a half day is devoted to it.

On summer evenings we lie there with our backs to the warm stones, enjoying the sounds and fragrance of the night and watching the stars. Even in winter the rock garden has charm.



Section through rock garden showing beds for plants



Ideal plan of rock garden



The Homes of Four Architects in the Middle West

By Francis Durando Nichols.



IT IS not often that one has the opportunity of inspecting the interior of an architect's home, and it is just possible that the modesty of the designer is the principal cause of his objection to its publication. But it is frequently the desire of a layman to see a house in which an architect may live, and the four houses illustrated herewith, represent the homes of four of the profession, and built in four different localities.

The home of Lawrence Buck at Rogers Park, Ill., illustrated in Figures 1, 2, 3, 4, 5, and 6, is a particularly interesting house, built in a simple manner, and at the same time with sufficient exterior detail to give it the artistic expression it enjoys.

The house is designed with square lines running straight from the front to the rear, thereby insuring square rooms on the interior. This is a very important matter to be considered when building a house, for it is not only an economy of space but also a plan to follow in regard to the judicious expenditure of money.

The main walls of the building from the grade line to the peak, are covered with a cement stucco, finished with a soft gray cement wash. The roof, constructed in a simple manner with a straight ridge extending from the front to the rear of the building, is covered with shingles.

The entrance porch is a simple one, placed at the corner of the building, while the living-porch, opening from both the living- and dining-room, is built at the side of the house, and with its arched ends of cement stucco give the chief characteristic to the building. This

living-porch is provided with movable sashes, and is enclosed in the summer with wire screens, and in winter with glass. The entrance to the house is through the vestibule, built at the entrance porch. Directly opposite the entrance door, the stairs ascend to the second story. This hallway is separated from the living-room by a beamed arch supported on square columns. The woodwork of the hall, living- and dining-room, is of cypress, stained and finished in a Flemish brown. The walls are covered with a mustard yellow burlap,

harmonizing well with the color tone of the woodwork. The walls of the dining-room are paneled with narrow battens, of cypress, extending from the floor to the ceiling, and the panels formed by these battens are covered with a similar burlap. The open fireplace in the living-room is built of brick, with an arched opening. The facings of the fireplace extend from the floor to the ceiling, and are laid in white mortar with wide joints. A panel seat is placed at one side of the fireplace. The kitchen is provided with a dresser, a cupboard, a sink, and a lobby large enough to admit an ice box and stores. The second story contains three bedrooms and a bathroom. The woodwork of these rooms, with the exception of the bathroom, is stained and finished in Flemish brown. The owner's room has two arched alcoves, one of which provides a lounging place, and the other an open fireplace. The

bathroom is furnished with porcelain fixtures and exposed nickel plated plumbing. The cellar contains the heating apparatus, fuel rooms and a laundry. The cost of this house was \$3,000, exclusive of grading and decorations.



Fig. 1—The entrance porch to Mr. Buck's Home.

The second house, illustrated in Figures 7, 8, and 9, is the home of Robert S. Smith, at Kenilworth, Ill. It has a pleasant exterior appearance, with wide stained brown clapboards for the first story, and brown stained half timber work, with white plaster panels, for the second and third stories. A small entrance porch is built at the front of the house, while the living-porch is built at the side; the entrance doors, opening from both the living- and the dining-room.

The entrance to the hall is reached through the vestibule.

trimmed with quarter-sawn white oak. The woodwork in the living-room is finished in a weathered oak. The walls have a sand-coated finish and are tinted a soft, dark brown. This living-room has a beamed ceiling, and an open fireplace, with brick facings, laid with $1\frac{1}{4} \times 8 \times 4$ -inch impervious, dark brown brick, and with joints raked out. The fireplace is finished with a five-inch shelf supported on six carved brackets. The dining-room is trimmed with light English oak, and it has a paneled wainscoting six feet in height, with a sideboard built in to correspond, and a



Fig. 2—The home of Mr. Lawrence Buck.

This vestibule and hall are trimmed in a handsome manner with sawn white oak, and each has a heavy wood cornice extending around the wall at the intersection of the walls and ceiling. The reception-room to the right of the entrance is trimmed with Honduras mahogany, and it has a plaster cornice and pilaster trim, and architraves extending around the room. Ornamental glass doors are placed between the reception-room and hall. Both the living-room and dining-room are

beamed ceiling. The walls above the wainscoting are of sand-coated plaster, tinted a Delph blue.

The kitchen, pantry, and butler's closet are trimmed with white oak finished natural. The walls are wainscoted six feet in height with cement, which is lined off to imitate two by six tile, and is finished with white enameled paint. All the floors on the first story are of quarter-sawn oak. The second story has a combination of white enamel and mahogany trim. The doors, window-stops and stools

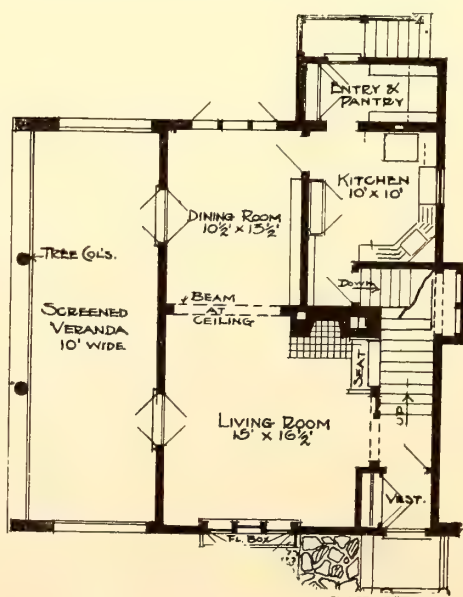


Fig. 3—The first floor plan.

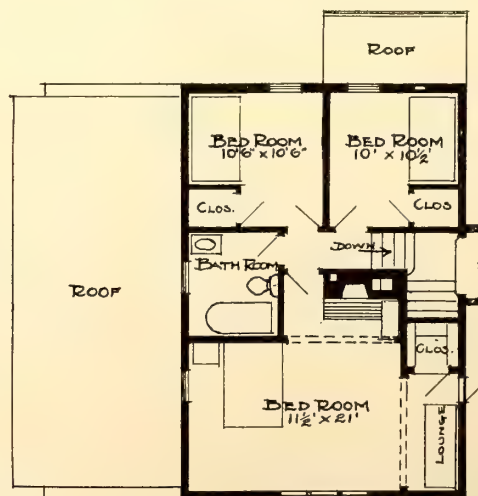


Fig. 4—The second floor plan.



Fig. 5—The fireplace in the living-room of Mr. Buck's house.



Fig. 6—The dining-room of Mr. Buck's house.

are of mahogany, while the base and trim is finished in white enamel. There are three bedrooms, a den, and a bathroom on this floor, the last being wainscoted with two by four tile to the height of five feet six inches. The floor is laid with two-inch Hexagon Vitreous floor tile. The fixtures are of porcelain and the plumbing is of nickel-plate and exposed.

The third floor contains a servant's room, trimmed with Georgia pine, stained brown, and a bathroom, adjoining, wainscoted to the height of five feet, and painted white. The front part of the attic is unfinished, and furnishes ample storage place. The basement contains the heating apparatus, fuel room and laundry.

The home of John A. Rogers, at Wilmette, Ill., and illustrated



Fig. 7—The home of Robert S. Smith.

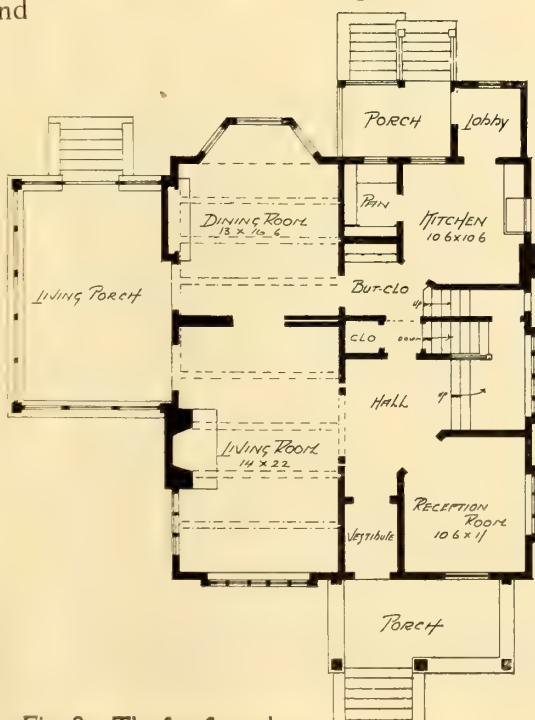


Fig. 8—The first floor plan

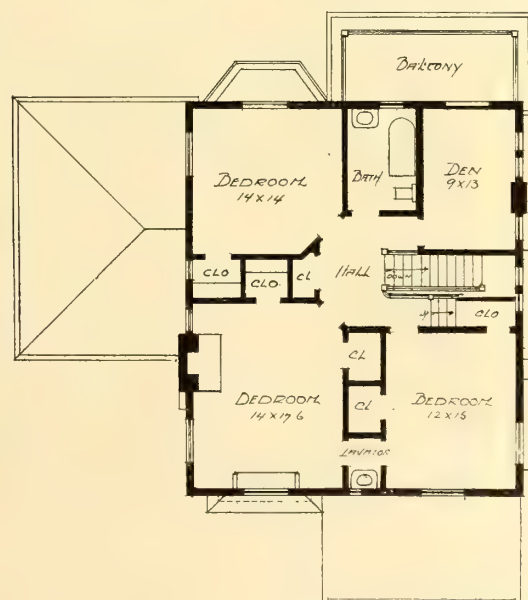


Fig. 9—The second floor plan.

in Figures 10, 11, 12, and 13, is a combination of rough cement stucco for the first story, and shingles laid with double courses so as to form a ribbed effect for the second and third stories. The gable end, with a chimney extending up its side, is an interesting feature of the exterior. The hall, library, and dining-room are trimmed with cypress, stained and finished in a soft brown color. The hall contains an ornamental staircase ascending to the second story. The library is trimmed with birch, and the walls covered with a two-tone brown wallpaper. The fireplace is built of brick, with the hearth and facings of a similar brick and the whole finished with a mantel of good design. The dining-room has a white pine trim painted with

white enamel. It is furnished with a buffet built in at one end of the room, and opposite the doorway leading from the library, while at one side of the room a door opens on to the living-porch, which is placed at the side of the house, screened in summer, and used for dining purposes. The butler's pantry and kitchen are trimmed with pine and are furnished with all the best appointments. The second floor contains three bedrooms and a bathroom. The bedrooms have white painted trim, and the walls of each room are treated in one particular color scheme. The bathroom has porcelain fixtures and exposed nickel-plated plumbing. The floors throughout the first and second story are of quartered oak. The third floor contains two bedrooms and a bath, while the cellar contains the heating apparatus, fuel rooms, and laundry. The cost of this house was \$5,000.

The fourth house illustrated in figures 14, 15, 16, 17 and 18 was built for Vernon S. Watson, at Oak Park, Ill. It is very difficult to secure a house with attractive elevations and well arranged plans at so low a cost as \$2,000, but Mr. Watson has been successful in this direction and has produced a unique and interesting house for a comparatively small

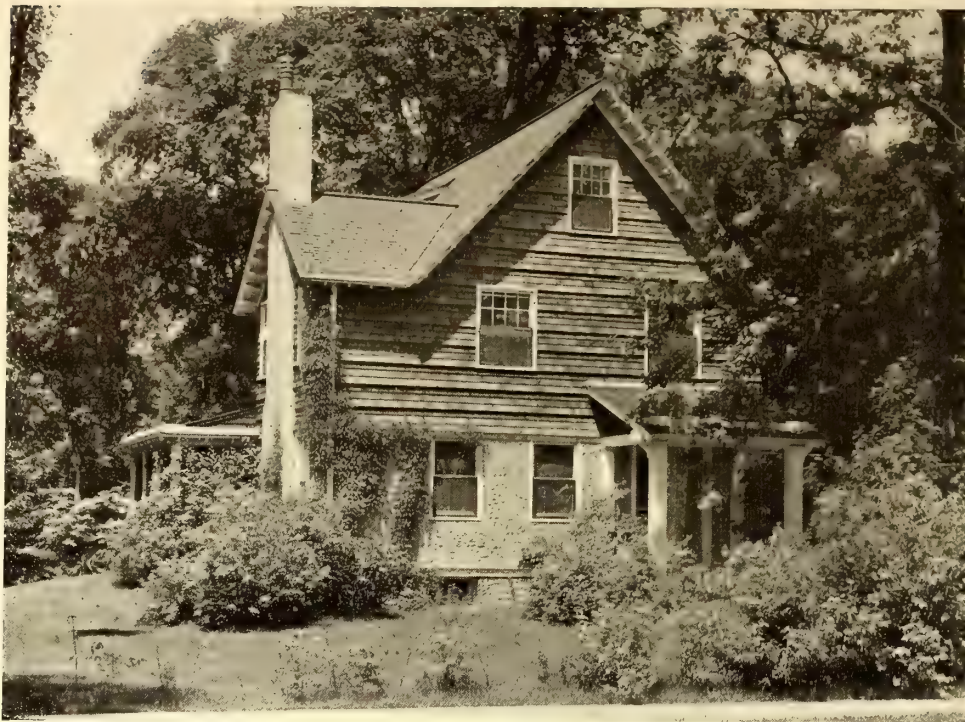


Fig. 10—The home of John A. Rogers.

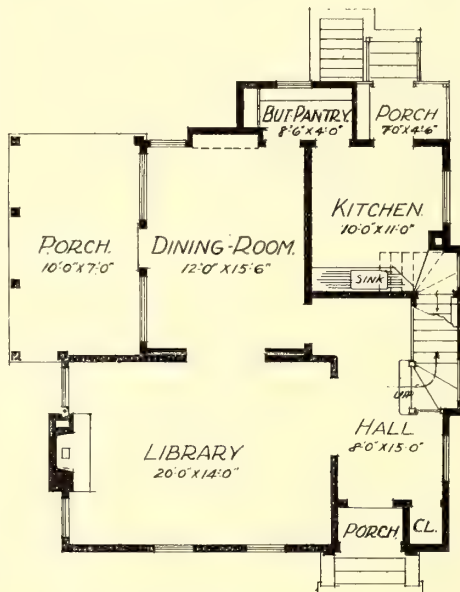


Fig. 11—The first floor plan.

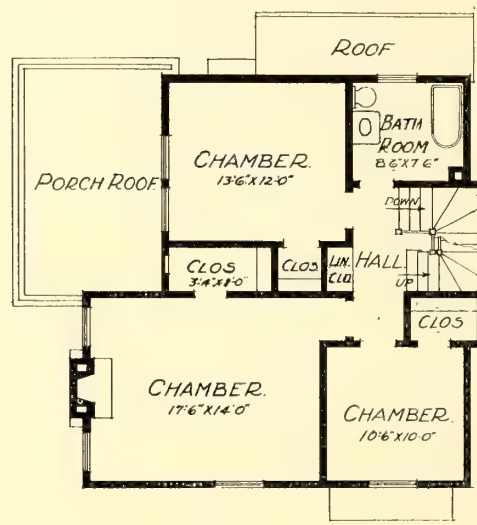


Fig. 12—The second floor plan.



Fig. 13—Another view of Mr. Rogers's home.

outlay of money. The house has many attractive features, among the important ones is the entrance porch built at one side of the house, and the main chimney built at the other side and outside of the main line of the building. The exterior wall is covered with wide boards; with the joints covered with narrow strips to the height of the sills of the first story windows. This is stained a soft brown color. The wall space between the window sills of the first story, and those of the second story is covered with a narrow clapboarding, stained a moss green color. The remainder of the building is covered with a cement stucco, forming a frieze which extends around the entire building, the whole of which is crowned with a low sloping shingled roof. The entrance to the house is direct from the living-porch, into a narrow hall, separated from the living- and dining-room by an archway supported on columns. Opposite the entrance door, the stairs to the second story ascend. This staircase is a combination one from which an entrance is made from the kitchen to the main landing as well as from the front hall. The hall and living-room have a wall covered with green burlap. The living-room extending across the front of the house has an open fireplace built

at one end with paneled seats at either side. Brown silk curtains are hung at the windows and the floor is covered with a moss green velvet carpet. The dining-room is trimmed with white pine treated with white paint. The walls are covered with yellow burlap and the floor with a yellow velvet rug, while the windows are hung with yellow silk curtains, making an harmonious and effective color scheme. The kitchen is furnished with every modern convenience.

The second story contains three bedrooms, a sewing-room and a bathroom, the last being treated

from this is that the standard of domestic architecture is

ference in the four houses illustrated, is the contrast of taste of four architects, designing their own homes, each executed in a different style, and each constructed of different kinds of materials, but as a whole, each is a happy and successful result of an individual taste.

The four examples presented herewith certainly do show a better idea of the tendency toward a better and more simple style of small house than has hitherto been found in many of



Fig. 14—The home of Vernon S. Watson.

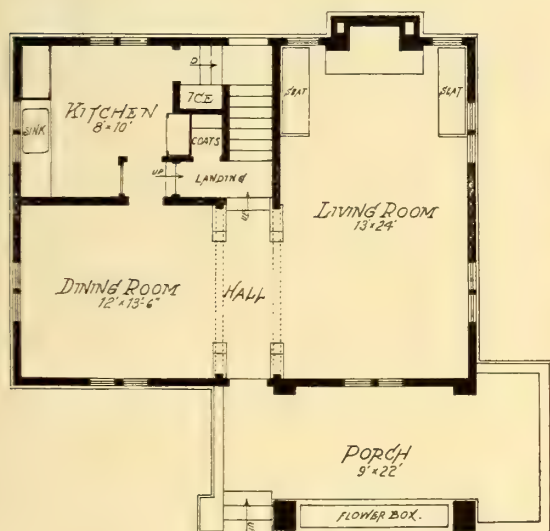


Fig. 15—The first floor plan.



Fig. 16—The entrance porch.

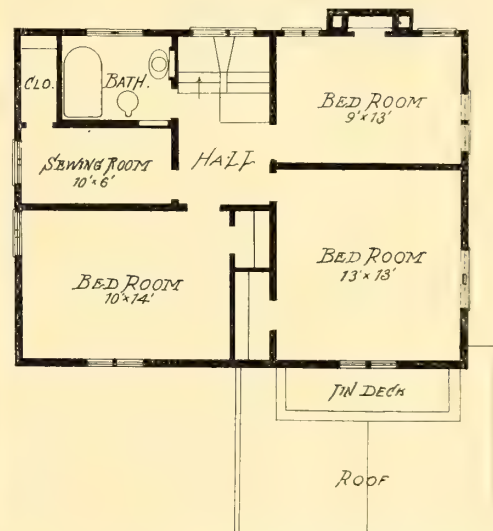


Fig. 17—The second floor plan.

with white enameled paint, and furnished with porcelain fixtures and exposed nickel-plated plumbing. The woodwork of the second story is painted white. There is no third story or attic to this house, but the sewing-room on the second floor is large enough for the use of a servant when one is required. The cellar contains the heating apparatus, fuel rooms and laundry.

The striking dif-

ferently slowly and steadily improving. That a house may be successful depends on many conditions, including among them an inspiration on the part of the architect to design a building that will be harmonious to the site upon which it is to be built, and at the same time to design and plan a dwelling provided with every convenience that will meet with all the necessary requirements of those who are to live in it.



Fig. 18—Another view of Mr. Watson's home.



Decorations and Furnishings for the Home

By Alice M. Kellogg

The Window Curtains

THE treatment of the windows of the home is closely allied in importance to the decoration of the walls (the latter was discussed last month in this department), for, together, the wall coverings and the window hangings impart, perhaps more than any other of the furnishings, that livable, homelike atmosphere that makes an attractive interior.

With the general advance in good taste that is noticeable in our new century, there is less seen than formerly of the over-crowding of a room with unnecessary furnishings. Still, one sometimes sees a window burdened with one or two sets of shades, a lace curtain next to the glass, an inside drapery of thin material with an over-curtain of heavier texture.

A window shade is usually considered the indispensable beginning for fitting up a window, but even this might be exchanged (say in a summer cottage with no adjacent houses), for a cretonne hanging put up on loose rings to facilitate drawing. In selecting material for a window shade it is unwise to use a cheap piece of goods, or to curtail expense on the fixtures. A plain stuff is better than something fancy, and the color should be carefully suited

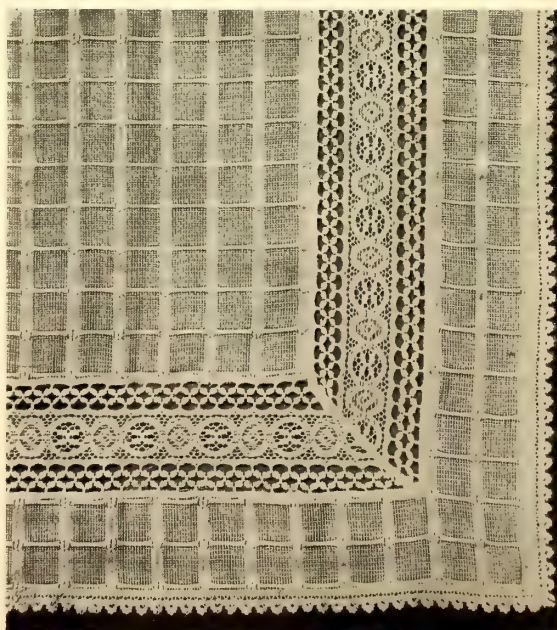
to both the outside sash and the interior woodwork. With dark woodwork in a room, the window shades look best made from ecru or buff linen. When there are no outside blinds a dark green or dark blue shade is required. Sometimes a medium tone of dull green may be the choice. Side hems are necessary to give body to the edges of the shade, although in the cheaper grades they are omitted. A new device for fastening the shade cord to the bottom of the shade is a great improvement on the old method of tying the cord to a screw eye. Windows that are set in low side walls may have the cords left off entirely and a crochet ring with short loops fastened to the bottom of the shade.

A consideration of curtains for the bedroom is always recurring to the home maker. In many of the dry goods stores there are muslin curtains by the pair with ruffled sides and bottoms at seemingly phenomenal prices, but a better quality of material may be indulged in at the same outlay if one is able to contribute the necessary stitching. White cheesecloth, unbleached muslin, cotton crepe, Swiss muslin or dimity, may be given a distinctive little touch by edging the sides and bottoms with a narrow lace. When this is done and there is no hem at the bottom there should be enough turned down at the top to allow for shrinkage.

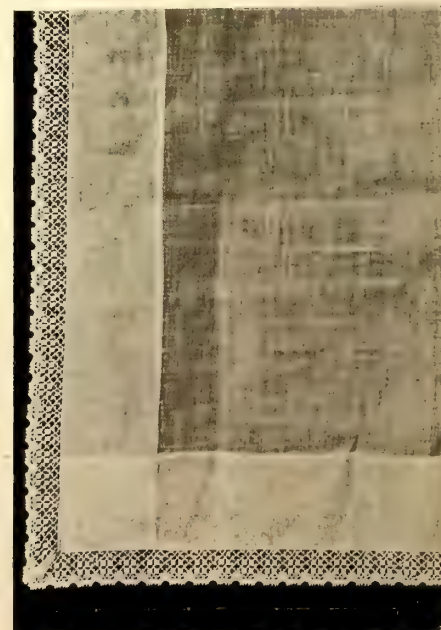
The nainsook insertion that is sold for trimming white



Muslin trimmed with insertion



Chantilly net



Lace-edged muslin



An applique trimming

dressings can also be applied to white muslin curtains, if the corners are neatly mitred. Or, a linen lace insertion with an edge to match may be the decoration.

Short curtains to the sill are the most practical for the bedroom, looped back or hanging straight as one prefers. White cotton loops are sold at ten cents a pair, and these are attached to a brass cup hook which is screwed to the casement about half-way between side of the lower sash.

In bedrooms that are poorly supplied with light, the muslin must be given up for a net or lace. Filet net with its square mesh, or bobbinet with the well-known round mesh, is the sheerest fabric for meeting this condition, although a grenadine or point d'esprit is also dainty. Nottingham nets are inexpensive, and in the small, set patterns look well when hung across the glass. The imitation filet net costs double but gives a finer appearance. Where the woodwork is painted white, the curtain material follows this color, and with dark woodwork an ecru tone is given the preference, a rule that applies also to the living-rooms.

If an over curtain is desired for the bedroom there are special materials in opaque or semi-opaque effects, cotton crepe at thirty-five cents a yard, cretonne from twenty-five cents upwards, linen at seventy-five, ninety and a dollar, taffeta at the same price as linen and various novelties that change from one season to another. The imported sun-fast drapery materials are notably desirable for bedroom windows and these come in plain colors, stripes and two tones.

How to trim these materials may be left to the ingenuity of the home maker, as there are countless ways and innumerable materials for this purpose. One of the late ideas in this line is to buy a flowered stripe in cretonne or linen and cut up the strips for bands of trimming. Or, the pattern may be cut out and applied on the material. The illustration shows a curtain of this character. The same method has also been adopted with net on which the cut-out border of cretonne is carefully sewed.

The variation in the width of windows, even in one

room, often makes it a problem as to the right amount required for fullness. Lace or muslin is usually put up with two lengths each as wide as the curtain rod. Thicker fabrics exact less fullness, but no specific rule can be made, as the weights of materials vary.

Lace curtains for a parlor or formal room look best when they are hung to the floor in straight lines without looping back. In a city house where the outside aspect is to be maintained, a short lace curtain to the sill is hung across the glass at every front window. This curtain is often hung in one length like a panel, with the bottom and both sides trimmed with an edge of lace.

A lace curtain ornamented with Cluny lace is always in good taste, even when the fashion turns from Irish Point to Arabe and from Arabe to imitation filet. Lace curtains by the pair may always be bought ready for hanging, but a more individual choice is often preferred and materials and lace are then made up according to an original design.

The Chantilly net with one-inch square in the pattern (see illustration), costs fifty cents a yard, and combined with insertion and edge can be had for six dollars a pair, including the labor of making up the materials.

Over curtains of light weight do not require a lining, but a thin interlining of canton flannel and a sateen lining give more dignity to a long curtain and preserve it from the effect of dampness and sun. A plain silk hung at each side of a window may be a means for emphasizing the color note in a room. For instance, the wall may have a paper in which yellow and white and green are combined. The fireplace tiling may be of yellow tiles, and the rug may be a mixture of colors. Over the thin curtains some yellow Japanese silk hung at the sides will give an accent of color.

Velvet and velour are standard textures for window curtains, costing from a dollar and a half to five dollars a yard. Besides the plain colors there are new weavings that give a shaded effect. A gold or silver braid adds very much to the charm of a velvet curtain if it is rightly applied.



Cretonne border applied to linen



The Summer Home of E. C. Stanwood, Esq., Kennebunkport, Me.

By Henry Hawley



THE house built for Mr. Stanwood, presents an excellent example for a summer home, in its large open and well ventilated rooms and ample piazzas, connected with a terrace, thus affording to sunlight an entrance into every room.

The underpinning, and the walls to the terrace, and also the chimneys are built of rock-faced local stone, laid up in a rough manner. The entire outside of the building is covered with shingles, and is left to weather finish a soft brown, while the trimmings are painted a dull olive green.

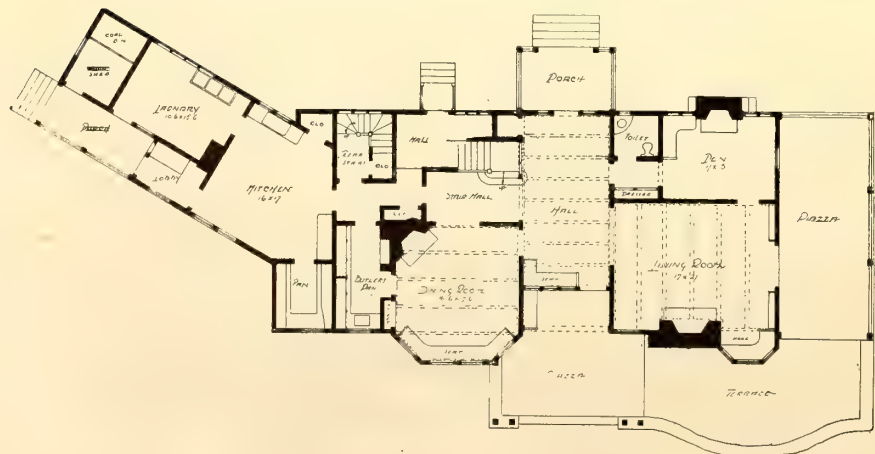
The roof is also covered with shingles and is stained a dull green. The entrance is into a central hall, which extends through the center of the house. It is trimmed with cypress, finished in a flemish brown. A high-paneled wainscoting finished with a plate-rack, a ceiling heavily beamed, and a paneled seat at the side of the entrance doorway, over which there is placed a cluster of small windows, are the features of the hall. At the left of the

hall, and recessed, is the staircase built in, and finished to correspond with the remainder of the treatment of the hall.

The living-room, which forms the principal characteristic of the house, is placed at the right of the entrance, and is furnished with two exposures. The wood-work is of cypress, finished in a soft brown color. It has a high paneled wainscoting, a plate-rack, and a beamed ceiling. The large open fireplace is built of rock-faced boulders for the facings and red tile for the hearth.

The mantel is built to the height of the wainscoting and is supported on carved corbel brackets. There is an attractive over-mantel of Gothic design in panels. To the left of the fireplace there is an attractive nook with seats and windows. Book-cases are also built in with adjustable shelves.

The den built at the rear of the living-room is treated in a green weathered oak. It has a wall covered with batten strips, forming panels, the latter being covered with crimson burlap. It has also an open fireplace with brick



First floor



Second floor

facings, and hearth and mantel, and a paneled seat, at the side of the fireplace.

The dining-room, treated with white enamel paint, is finished in the Colonial style. The walls have a paneled wainscoting to the height of seven feet and finished with a plate-rack. Above the wainscoting the walls are covered

with a blue and white wall paper and the ceiling is beamed. There is a china closet built in, with a cupboard beneath the counter shelf, and shelves above, enclosed with glass doors of latticed design. The open fireplace has a red brick facing and hearth, and a quaint mantel of Colonial style.

The butler's pantry is fitted with all the best conveni-



The hall

ences, and it has sink, drawers, dresser and cupboards.

The kitchen, laundry and its dependencies are fitted with the best modern improvements, including range, sink, pot-closet, store-pantry, lobby large enough to admit an ice-box, and wood and coal shed complete.

The second story is treated in white. There are four large bedrooms, and also two bathrooms handsomely fitted with porcelain fixtures and exposed nickel-plated plumbing, dressing-room, linen closet and three servants' bedrooms and bath, which are placed over the kitchen extension.

Messrs. Chapman and Fraser, of Boston, Mass., were the architects of this interesting house.



The living-room



Fig. 1—A thousand-leg table.

Furniture for the Home

By Esther Singleton.



Author of "French and English Furniture," and
"Dutch and Flemish Furniture"



A GREAT deal of attention has been paid of late years to the making of furniture to meet the constantly increasing demands for articles that combine artistic qualities with those of general excellence. Astonishingly good reproductions of old models are being turned out every day by the large factories, while many small workshops carried on by individuals and small communities of workmen are producing good furniture without the aid of machinery.

The specimens shown here are examples of work made by hand by a small body of artisans, who are guided by two principles: "To make things that will serve their purpose and stand the wear and tear of time and usage"; and "to make these things as good to look at as possible." First of all, therefore, good material is chosen, and in regard to wood one of the workers says:

"In the furniture of our forefathers, which was good enough to last, the wood was picked not for its ease in working, but for toughness first and then for beauty of grain. In contrast with this, the commercial furniture maker, not builder of to-day, must select the easily worked straight-grained uninteresting wood for his machines, without which he is lost, and he must veneer it to get beauty of grain. He takes no account of the accidental beauty spot, or curl, or knot, which the true artsman so fondly handles and subdues to his purpose."

Wisely enough, these furniture builders have gone back

to ancient forms for their models; and, having selected good, strong designs, construct them on solid principles. The table in our illustration, Fig. 10, is mortised, tenoned, pegged and glued and the two ends joined together by loose wedge joints, as a glance will show. The chairs are also solidly built, and are properly pegged and joined together.

Fig. 1 represents an eight-legged table of the variety popularly known to-day as the "thousand-legged table." In old inventories it is referred to as "oval table," or "folding table," or "table that folds up." It has four stationary legs joined by stretchers and four movable legs that when pulled forward form a support to the drop leaf. As a rule, this table was made in oak and was small in size. The style remained long in fashion.

A superb example of mahogany which belonged to Sir William Johnson and which was confiscated in 1776, is now in the Albany Institute and Historical and Art Society. This beautiful table is six feet six inches long, and the frame that moves to support the leaf consists of three legs, making ten legs in all.

Figs. 5, 7, 9 and 10 are suggested by models of an earlier period.

Fig. 5 is a Gothic table, the end supports of which are carved and pierced with Gothic tracery. This is a large strong table suitable for a library or a side table in a dining-room. A wine-cooler, a vase of flowers, or a handsome piece of porcelain could be placed on the bottom shelf.

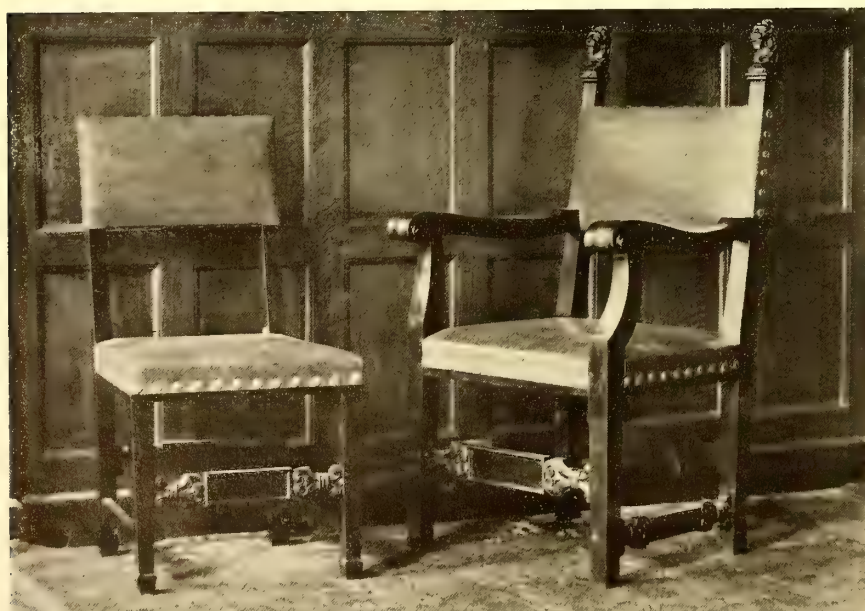


Fig. 2—Two chairs of good style, except that the spade foot does not belong to this period.



Fig. 3—Two chairs after a style that was popular in the Seventeenth Century.

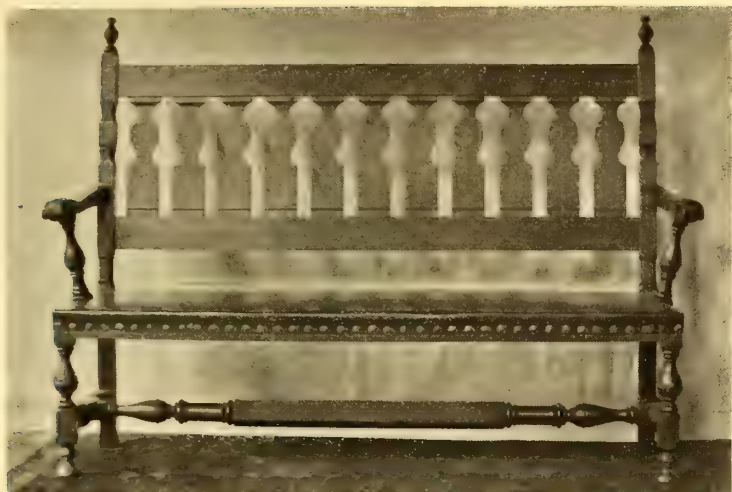


Fig. 4—A settee with a banister back and leather seat.



Fig. 5—A Gothic table with the ends carved and pierced with Gothic tracery.

Fig. 9 is a Gothic table, the end supports of which are carved, but not pierced.

Figs. 7 and 10 are Gothic chairs and tables. The supports in the table in No. 5 are carved and pierced, but are not alike. The chairs are somewhat reminiscent of

wellian chair." It has turned side supports at the back and turned front legs, and the leather seat is fastened with large-headed nails. It would be more harmonious if the back legs were turned like the front ones, to continue the spiral of the back supports. However, it is an admirable



Fig. 6—A low-back leather chair of Flemish model known as a Cromwellian chair.



Fig. 7—A Gothic chair and table. The supports to the table are carved but not pierced.



Fig. 8—A low-back leather chair more harmonious than Fig. 6, the front and back legs are alike.

German furniture and would look well in a simple hall, especially the one in Fig. 7.

Fig. 4 is a settee, with banister back and leather seat, which would be suitable in a hall placed near the fireplace.

Fig. 6 is a low-back leather chair after the old Flemish model familiar in Jacobean days in England as the "Crom-

wellian chair or dining-room chair.

Fig. 8 is more harmonious, because the back legs are continuations of the side supports. If upholstered in scarlet leather with brass, silver or black enamel nails, in bright yellow leather with silver nails, or in light blue or dark green leather, it would make a very practical dining-room or library chair.



Fig. 9—A Gothic table, the ends of which are carved but not pierced.



Fig. 10—The support of the Gothic table and the back of the chair is carved and pierced.



AUTOMOBILING

Conducted by Stanley Yale Beach



The Closed Car

Its Various Types and Their Utility

FOR this season of the year some form of closed automobile is preferable on the country place, while for town use it is well nigh universally employed.

There are many different kinds of closed cars in use, from the curtain-covered taxicab with collapsible top, to the large, elaborately fitted limousine with every modern convenience. Midway between the two is the inside-operated coupé for the automobilist who does his own driving.

For people who already own a good touring car, the easiest way of procuring a closed car for winter use is to purchase an extra body of the type desired and to have this mounted upon the chassis. During the months the new body is in use, the touring body can be renovated and made as good as new for use again in the spring.

The purchaser of a new machine will do well to look over the field thoroughly before deciding upon any particular make or type. For city work and the suburban town where the roads are good, the electric is the vehicle par excellence. Inside-operated electric coupés are now built with a guaranteed mileage per charge of 100, and a carry capacity of three to four persons. The storage batteries of these machines will run them 8,000 to 9,000 miles without renewing, which means that a year's use of a new car can be had with practically no expense save the cost of current, as the tire maintenance of an electric automobile is very slight.

This type of vehicle is also made in the limousine and landaulette forms with all the mechanical improvements found on gasoline cars, such as bevel gear drive and the like. Electric lights, heaters, signalling apparatus and

all the multitudinous devices of more or less utility which are operated by the "invisible fluid" are either regularly fitted or can be easily installed at the desire of the purchaser.

If a gasoline car is chosen, electric lights can nevertheless be fitted, the current in this case being supplied by the ignition batteries which are kept charged by a special dynamo driven continuously from the clutch shaft back of the engine. Combination oil and electric lights can be used on the dashboard, the former being of use in case the current gives out. With this type of car a hot water radiator connected with the water jacket of the engine may be fitted, or a smaller heater supplied from the exhaust gas may be used. Various fittings, such as a mirror, card case, vase for flowers, etc., are found on all well appointed limousine cars. A speaking tube leading from the inside to a point

beside the chauffeur's head, is indispensable. An electric speedometer within the car can be installed without any difficulty, and in connection with this an electric-light signalling device for silently indicating to the chauffeur whether to go fast or slow, which way to turn, etc., will be found a great convenience. Now that attention is being given to the question of smoke emission by automobiles in the larger cities of the country, a smoke indicator is needed to appraise the occupants of the car whether or not the engine is emitting smoke on account of excess of oil or for any other reason. Doubtless in the near future some such indicator will be brought out, for its necessity will soon be as great as the recent need of an accurate speedometer with which to combat the policeman's testimony when one is arrested for speeding. Apropos of speedometers, besides the



An interior of a high-class limousine car.

new electric one mentioned above (which is run from a tiny magneto placed beside the front wheel, thus doing away with the bothersome flexible shaft and replacing it with two small wires), there is now a new apparatus of this kind operated by air from a small blower likewise placed beside a front wheel and connected by small rubber tubes with the indicating instrument of which two can be used if desired, one in front and one in the rear of the car.

A popular car with some owners is an inside-operated gasoline coupé. Some of these are designed with special bodies while others have a top that fits upon an open runabout and converts it into a closed car. Whichever form of body is used, a convenient device that should be fitted to such a machine, is some form of self starter. A good apparatus of this kind—there are several on the market—will make it unnecessary for the owner who is his own chauffeur, ever to crank his machine when in ordinary use.

In purchasing a closed car the automobilist will do well to consider its adaptability for touring use in the summer season. The limousine is apt to be uncomfortably warm in mid-summer and besides this, it is not well adapted to touring. Probably the finest combination closed car for winter use in town and open or closed machine for touring in summer is a new 7-passenger landau recently brought out by a well-known Buffalo company. The motive power is a 6-cylinder engine of 66 h. p. This car was especially designed to meet all the exigencies of touring in sparsely settled districts where good hotel accommodations are few and far between. One of them was tried last season abroad, and the new model contains many refinements and improvements suggested by actual use. By fitting a special Victoria top with a folding glass front over the chauffeur's seat in place of the usual fixed deck and glass front, when the top is folded down the car is entirely open, the only obstruction to the passengers' view being



An up-to-date limousine.

opened. A folding wash basin is located in the back of the front seat, water for which is supplied from a pressure tank beneath the car. This wash basin cabinet also contains towels, combs and brushes, etc. Other toilet articles that might be of use are also provided. A liberal provision has been made for trunks, of which two can be carried on the roof, and three more in a boot back of the body. The chauffeur's trunk fits in a compartment that is ordinarily used for supplies. A gas tank for acetylene is fitted beneath the rear of the frame. The upholstery of this machine is of tooled Cordovan leather, which experience has shown improves, if anything, with use.

Furthermore, this material does not absorb dust as does whipcord or other cloth covering. An easy way of cleaning the interior of any closed car is to make use of a portable vacuum cleaner. One of these machines is part of the equipment of all up-to-date households, and it is an easy matter to make use of it in the garage as well.

Part of the equipment of every closed car, whether it is used for touring or simply for city work, should be some form of demountable rim. An extra tire, fully inflated, should be always on hand, ready for any emergency. When tire trouble comes, as it is always bound to do sooner or later—and often at the most inopportune time—it need not occasion a two or three minutes at the outside, and the owner will feel well repaid for the extra investment which the special rims may represent.

This is a very important feature and is one that should receive every possible consideration by all who use the automobile.



An inside-operated electric coupé.



Fig. 1—This stucco house contains ten rooms and two baths.



Fig. 4—A house built of yellow stucco walls with a red tile roof.



Fig. 2—A house built of cement blocks and covered with stucco.



Fig. 5—An eight-room house designed for and built on a suburban lot.



Fig. 3—The exterior walls are built of frame covered with cement.



Fig. 6—A stucco house of square lines and of good design.

An Interesting Group of Stucco Houses C



Fig. 7—This house is of a good combination of stucco and shingles.



Fig. 10—Another view of Fig. 1 showing the overhang of the second story.



Fig. 8—A house of a pleasing combination of stucco and shingles.



Fig. 11—A concrete house carried out in the mission style.



Fig. 9—A stucco house planned for a suburban lot. Same as Fig. 6.



Fig. 12—Another view of the house in Fig. 3, showing sleeping porches.

Costing from Two Thousand Dollars Upwards



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An Interesting Group of Stucco Houses Costing from Two Thousand Dollars Upwards



A beautiful example of ancient tapestry, depicting Jephtha's daughter.

The Gobelin Tapestry Works

By Frank Brown

TAPESTRY weaving has been an active industry in the region of Paris from very early times. Francis I. established the first royal tapestry establishment at the Chateau of Fontainebleau, in 1530; his predecessors had obtained their tapestries from private works. This factory turned out some remarkable work, but lasted for only thirty years. In 1550 Henri II. founded the Trinité factory at Paris, and this continued to flourish down to 1635. Henri IV. decided to found an important tapestry establishment in the city and it was begun at the Louvre palace. Afterward we find it transferred to its present situation, where Jehan Gobelin had already founded a dye works in the middle of the fifteenth century upon the small stream of the Bièvre, the waters of which were supposed to have a special value for dyeing, although this has been since disproved, and the fame of the Gobelin dyes was due only to the skill of the workmen. But no weaving was done here until Henri IV. transferred the royal weaving factories to this locality, and placed the whole under the direction of Marc de Comans and De la Planche, when it was first known as the Gobelin tapestry works. It was during the reign of Louis XIV. that the establishment enjoyed its greatest prosperity. At this time it was much enlarged and was placed under the direction of the painter Lebrun; his cartoons were largely followed in making the great pieces of tapestry which have since become famous. Without attempting to follow the further history of the establishment, which covers such a long period, we will give a short account of the various parts of it, and point out some of the

main processes which are used. The warp or foundation of the Gobelin tapestry is formed of a series of stout woolen threads which are stretched upon the loom, and are well fixed in place. The weaver then applies the woof, which consists of colored threads forming the pattern. Two kinds of tapestry were formerly made. In the *haute lisse* tapestry the warp was stretched vertically upon the loom, while in the *basse lisse* it was placed horizontally. At present only the *haute lisse* is made at the Gobelin works. Some of the looms for this kind of tapestry date from the time of Louis XIV., but have been somewhat improved in more recent times. As will be observed in the accompanying engravings, this type of loom consists of two horizontal cylinders placed about ten feet apart and held in two uprights forming a frame. The cylinders are mounted at the ends in trunnions which work in wooden sockets so that the cylinders can turn freely. The bearing slides up and down in a groove in the frame, and the roller is turned about by means of a lever. As to length, the looms vary from twelve to twenty-three feet according to the size of the tapestry which is to be woven. Sometimes several pieces of narrow tapestry can be woven upon a single loom of the larger type.

When mounting the work upon the loom, the weaver first sets up the warp of vertical threads, and each thread is given an extra length of about five feet in excess of the desired length of the tapestry. The threads are stretched on the rollers, putting the extra length on the upper roller. The threads of the warp are equally spaced, the standard spacing allowing about twenty-five threads to the inch. The tension upon each of the threads is about seven pounds,

which holds them well in place. When the warp has been laid out, the weaver passes a one-inch glass tube between the threads so as to separate the uneven-numbered threads on the outside and the even threads on the inside. The rod is placed about two feet above the working point. To carry out the weaving process, the weaver takes his place at the back of the loom, with the original design in colors placed behind him. He repeats the design by making a tracing in ink upon the threads of the warp, but this is only to give him the principal points of the design, and the weaver must be a veritable artist in order to copy faithfully the painted cartoon upon the canvas. He is provided with a great number of spools or shuttles, each containing a different colored thread. As the work progresses, the finished part of the tapestry is rolled upon the lower cylinder.

In the piercing room where the weaves are prepared for finishing or repair, one

Then he added one-tenth of black, so as to darken each of the colors, and placed the latter shades in a second circle. Adding two-tenths of black gave a third circle, and so on down to nine-tenths of black. He thus had 720 color elements. Then each element was divided into twenty tones ranging from light to dark, giving in all 14,400 color divisions. Adding to these twenty tones for the gray, he had a total of 14,420 shades. The dyeing establishment was reorganized in 1890, and the formulæ and processes for the different colors were kept recorded in a special register, along with samples of the wool or silk. In former times the silk which came from the Lyons factories was dyed in those establishments, but later on it was dyed in the silk as well as the wool at the Gobelin works. In the register are kept an account of the laboratory experiments and of all the manipulations. In the storehouses are kept a large number of spools of dyed threads, and three divisions are used for the storehouses, the detail supply, the general stock, and the old or disused stock. When the design of the tapestry has been chosen, the choice of the colored threads is commenced in the detail room, and here are arranged a series of spools which has been already

used for other tapestries and holds part of their thread. In this stock are kept some 34,500 spools of colored wools and 5,600 of silks, but some of these are duplicates. If the desired color is not found among the spools, the second stock is resorted to. In it the colors are kept



The piercing room where the weaves are finished or repaired.

of our engravings shows two weavers working side by side upon the same loom upon different pieces of tapestry. In weaving the larger pieces the worker is almost entirely concealed from view.

In all the tapestry of the ancient period the warp consists of woolen threads, and this seems to be the best, for other kinds of thread have been tried without much success. Cotton thread was substituted in 1850 for the wool, as it was claimed to be cheaper and less liable to attack by insects, but in 1890 the use of wool was resumed, as the advantages claimed for cotton were not substantiated in practice, and the economy was very small. Silk has also been used, but without any advantage.

The dyeing of the threads is one of the most important operations, and this has always been carried out under the direction of a chief dyer who stood at the head of his profession. As told above, the water of the Bièvre was said to have a special efficacy in dyeing, but chemical analysis showed this to be a fallacy, and as far back as the last century the Seine water was used, as the water of the Bièvre became fouled by the different factories along its course. In 1665 one of the famous master-dyers was Van Kerchoven, and the secrets of the trade were handed down in this family from father to son for nearly a century. After that came other dyers, who were not as successful. The famous chemist Chevreul took charge of the dyeing factory in 1824, and was the first to establish a standard system of color-shades. This he carried out by making a disk or circle containing seventy-two principal colors in a series.

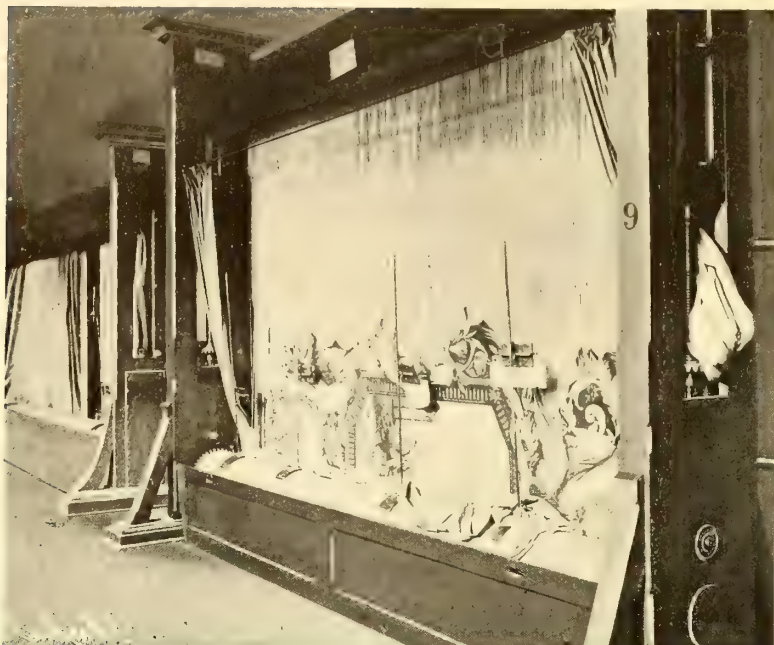


Weaving three pieces of tapestry on the same loom.



The dye vats where the wool or silk is colored.

in the dark and are classed according to Chevreul's system. The stock contains about 11,000 shades of wool and 7,500 of silk which come directly from the dye shop, and in this case there are no duplicates. Should this desired color not be found in any of the stocks, the color is dyed upon the wool according to a given sample, and an excess of the thread is provided, so as to leave a part for the storehouse. One of the illustrations herewith shows the *rentrai-ture* or piercing-room, which is one of the important parts of the factory. Here are filled up the gaps which are left in a new piece when several weavers work upon it at the same time, or else the borders, which have been woven separately, are added to a tapestry. Repairs to old pieces of tapestry are numerous, seeing that many of them date from an ancient period and have suffered more or less damage. All this work requires great skill. To repair an old piece,



Haute Lisse weaving; the workmen stand behind the loom.



A loom for Savonnerie velvet carpet.

a new part of the warp has to be formed, then the woof is put in with the needle. Where the gap is too large, an extra piece is woven on the loom, and is then joined on in the piecing room. In this part of the shop are kept the stored pieces of tapestry, old pieces are cleaned and renewed, etc.

The Savonnerie velvet carpets are also woven at the Gobelin works. It was as early as 1626 that the Savon-

nerie establishment, then a separate factory, was founded during the reign of Marie de Medicis, under Simon Lourdet. Since 1826 these famous carpets have been produced at the Gobelin works. But they are now exclusively used for wall hangings. One of the engravings shows the method of weaving, which differs much from the tapestry process. Here the workman is placed in front of the loom and has the colored design suspended above him.

Winter Diseases of House Plants

How They May Be Prevented



WITH proper care it is possible to employ the same plants for the adornment of the garden and veranda in summer and the house in winter, but species that flower profusely in summer require rest in winter, and, consequently, are not desirable house plants. All plants, indeed, have alternating annual periods of activity and rest. This alternation is most conspicuous in bulbous and tuberous plants, and it is also sufficiently obvious in woody plants which shed their leaves in winter. To this class belong most of our common trees and shrubs and also numerous ornamental species—fuchsias, hortensias, roses, pomegranates, etc.—which in winter are destitute of all beauty and, if they require protection, are usually stored in the cellar.

But many evergreen foliage plants are also quite inactive or dormant in winter. Among these are palms, India-rubber plants, azaleas, camellias, and the very pretty coffee plant, all of which are very desirable as house plants because they retain the beauty of their foliage through the winter and require comparatively little light and care. Yet unfavorable conditions will cause the tips of palm fronds to wither and dry up, and the leaves of India-rubber plants, azaleas, and other species to lose their pert stiffness, and droop, turn yellow, and finally drop off.

Foliage plants are usually kept far too warm. Even tropical plants are more apt to suffer from too much heat than from too little. Plants should never be placed near stoves or artificial lights, the direct radiations from which are always injurious if long continued. The amateur naturally thinks of the florist's greenhouse and endeavors to approximate to its temperature, as he conceives it, but the greenhouse is by no means so hot as it seems to a casual visitor. It is the humidity of the greenhouse that makes it appear so hot, and humidity is precisely what is lacking in the dwelling, especially if it is heated by steam or hot air.

Errors in the location and treatment of house plants are revealed by certain symptoms. The drying and hardening of the tips of leaves indicate insufficient moisture in the air, the drooping and yellowing of the foliage of plants with large leaves show that the temperature is too high. Another infallible symptom of excessive heat and dryness is the appearance of various small insects.

All house plants should be packed very carefully in non-conducting material for transportation in cold weather, especially if they are taken from a hot room or forcing house without being hardened by remaining awhile in cooler air. Recent experiments have proved that tender plants may be killed by a few seconds' exposure to the open air in cold weather.



Furnishing the Apartment

By Lillian Hamilton French.



IV.—The Bedroom



NO HOUSE is so difficult to furnish as a flat, the reason being that the stairway of a house makes a natural division of floors, separating the various departments; while, unless a flat is duplex or constructed on the principles of a house, everything is on a level and therefore in evidence. It is

this being in evidence which makes the difficulties, and forces upon the furnisher two problems of primary importance. The first of these relates to colors, and the blending of those that run from one room to another; the second is such a scrupulous arrangement of details that the purpose of each separate room is kept intact, no appointments belonging to a sleeping-room, for instance, being permitted to appear in a parlor.

As the doors of bedrooms are supposed to be closed, the color of their walls needs bear no relation to that of a living-room. At the same time, the shock experienced by coming from a hall done in a flaming red, to a bedroom done in yellow or pink, must necessarily be avoided. The best results are only obtained when all the tones throughout the flat are kept in harmony. Happily the cry against woolen hangings in a sleeping-room has been almost everywhere heeded. In the

newest and best examples one never sees to-day anything but cotton and linen stuffs, unless of course, the apartment is constructed along sumptuous lines permitting taffetas and satins at the windows. One other great improvement, too, is everywhere visible. The apologetic air of the ordinary flat-dweller has given way to a frank acknowledgment of conditions, a putting aside of difficulties and a going honestly to work to make each room all that it should be, or

would have been in a house. Gloom especially in bedrooms is avoided, the ponderous is shunned, and every respect is paid to the niceties.

Perhaps the best way of illustrating these remarks may be found in a detailed description of some new and lovely bedrooms. Thus there is a small one, not more than ten feet by twelve, having but one window and door. Any wall covering showing large figures would necessarily have been too obtrusive. Moreover, as the room opens onto the street, the question of disfiguring dust had to be considered. So this one used by the master, is treated in this way. The walls, ceilings and wood-work are painted white. To relieve the possible bareness, the wall surfaces are divided



Fig. 1—A dressing-table with shelves underneath for boots and enclosed with a valance to match the curtains hung at the windows and the bedspread.

into well-proportioned panels. This was done by using ordinary picture molding, costing six cents a foot, tacking it

on the walls and painting it white. The transformation was delightful. Not only was a sense of space immediately given by the white to a room otherwise seemingly cramped, but a charming feeling of freshness and purity was added. The paneling, too, stamped the room at once as out of the ordinary, giving it the authority of a well thought out design. Yet all this was done by the exercise only of taste and discretion, and without the outlay of too many dollars.

The furnishing of the room carries out in every detail the same sense of the well-thought-out and delightful. The bed is of gray enamelled iron. The bed trimmings repeat the curtains. Thus the spread, valance and window hangings are all of a thick white spotted dimity, very wide and costing ninety cents a yard. This is trimmed with a band of figured chintz put on an inch or two from the edge. The chintz, by the way, shows a striped design, and if this fashion of trimming is to be adopted, care must be taken to buy a material that can be divided in stripes, as an ordinary flowered or figured material, when cut as a trimming, would produce a sense of confusion. The curtains are looped back by wide bands of white dimity, an arrangement that gains its note of distinction from an enormous disc of the chintz sewed on the front of the band. This disc is made by tak-



Fig. 2—The white plastered walls of this room are paneled with a small molding and painted a French gray. The bed covering and curtains to the window are of the same material.

table stands the electric lamp for reading, covered by a soft shade. The pictures are all old French prints, so pre-



Fig. 3—The bedspread is of gray dimity trimmed with a flowered chintz which harmonizes with the gray striped wall-paper on the walls and the curtains hung at the windows.

ing a strip of the required length and sewing it together at the ends. The inside edge of the strip is then gathered and pulled tight into a center, which leaves the outer edge free to flare. The center is finished with a large button covered with the chintz. Against the window panes, thin white muslin curtains are hung. Outside on the sill, a window box is filled with growing plants. A gray-white dressing table, a night table and chair of French design, complete the furniture of the room. On the night

preserving the general harmonies, and it is the negligence of just such minor details which destroys so many interiors.

In the bedroom of the mistress belonging to this same apartment, the window hangings and the bed arrangements of the master's room are repeated, but the effect gains variety not only by the larger size of the room, but by the color of the walls, which in this instance are covered by a cool gray-white striped paper. That which makes the room altogether feminine is the dressing-table, an article of furniture charming in itself. We see too few dressing-tables in this country. The ugly and necessary bureau has unhappily taken its place. This one is not only exquisite in itself, but has conveniences which most tables



Fig. 4—A convenient way by which a lavatory is enclosed in a room and the panelled seat in front of the window provides a place for boot shelves.

lack. It is of a French design and painted gray-white like the master's furniture, and trimmed to match the curtains. The shelf below, concealed by the flounce which also protects it from the dust, is large enough to hold a dozen pairs of shoes. Above the shelf are two drawers for use for hair pins and handkerchiefs. Now the flounce, though seemingly made to run around the table, is really divided in front and on the sides, into three parts, the openings being concealed by the fullness. Two of these parts are tacked separately on to the drawers, either one of which can therefore be easily opened without disturbing the other. The top of the table is covered with the white dimity and has a very narrow strip of the chintz running around the edge, giving not only a finish to the whole, but relieving the sense of bareness. Over this in obedience to an ever-growing fashion, there is a large piece of thick plate glass fitting perfectly. This protects the top from dust. These glass covers can be obtained from shops devoted to surgical supplies.

Over the table, in obedience also to the best prevailing fashion of the day, an electric light is suspended—an ordinary bulb like those seen everywhere hanging from the ceiling by a wire. That which lends it distinction is a charming shade, soft-toned, edged with a fringe and trimmed with a garland of tiny pink rosebuds. As a study of the accompanying illustrations will show, nothing is permitted about the room which is ugly. Thus there are none of those embroidered horrors destined for loose hair, no fluggy pin cushions are visible, and the whisk broom is not considered sufficiently beautiful to be hung in a conspicuous place, even when it is encased in a silver or embroidered token.

A bedroom of more modest proportions in another flat has on the walls and at the windows a cretonne of stripes in soft green tones relieved by a line of roses. This costs but nineteen cents a yard. As new designs appear every

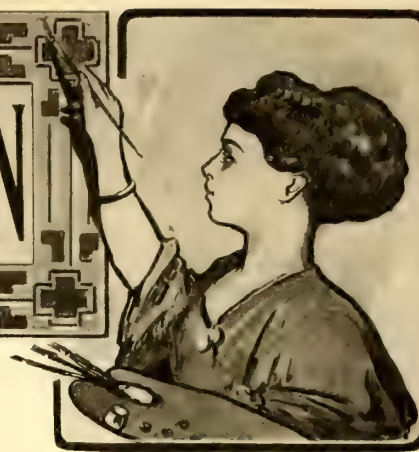
year, its exact duplicate may not exist, but in any large establishment one may find a great variety for the same price. The expense lies in putting it up, since two wooden strips are required, one at the base board, the other under the ceiling. The gimp which finishes the edge is inexpensive. This covering can be kept clean by frequent brushings, and where there are no children and a room is easily aired, it is to be more highly recommended than a paper and stuff which, though sold as matching, represent differences of shades always apparent to the sensitive eye.

In choosing any wall covering, samples should first be tried, a yard or two obtained to be lived with for a day or two before the purchase is made. The lights of a room may throw out of key that which looked well in a shop, designs may over-accentuate themselves and a color may become offensive.

In the bedroom just mentioned special attention is drawn to the valance, often a most expensive article when made, and always difficult to wash. This one is made after a new and original design. An ordinary dimity spread costing \$1.38 for single beds and \$1.88 for double beds, is used and trimmed with a crocheted lace bought on the street anywhere from 25 to 75 cents a yard. This cover is basted on to the top of the box spring, and always remains stationary when the upper mattress is turned, the only fitting required being about the legs of the bed where a triangular piece must be cut out. It relieves the bed of the look of a hospital ward, as a bed without a valance is apt to look, besides making the bed itself pretty when the coverlid is removed, and one is forced to spend a day on one's pillows. The coverlid of course must be of dimity like the valance. Thus the two bedspreads, one smaller than the other, may be had for \$3.26, which is much less than the cost of making the ordinary valance with its necessary gathers and strings and buttonholes and wooden sticks. The crinklet dimity is cheapest and very pretty, costing 95 cents or \$1.25, according to the size.



Fig. 5—The walls and curtains of this bedroom are of cretonne with stripes in soft green tones relieved by a line of roses.



Conducted by A. Russell Bond

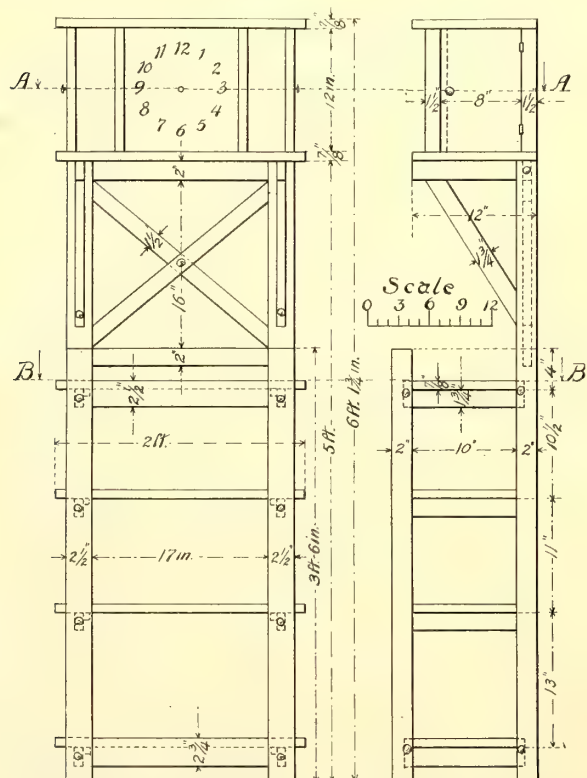
A Combined Grandfather Clock and Book Case

SOME time ago the writer came across an old clock, a family heirloom, that was in such a dilapidated condition that it was useless to think of repairing the original case. However, the works were good and fit for service. It was not a typical grandfather clock, but a square, key-wind, weight-driven clock very similar to the kind now known to the trade as an O. G. clock. To set off the timepiece to good advantage it was made part of a narrow book case, thus producing the effect of a tall grandfather clock, while accomplishing an economy of space in the tiny den it was to furnish.

How the clock was changed from a key to a chain-wind does not concern us, because any one desiring to copy the design here shown probably would not have to contend with precisely the same conditions. Chain-wind movements can be bought for a reasonable sum though key-wind movements are less expensive.

strengthen the frame it is braced at the top and bottom with angle braces as shown in the sectional view B. B. This view represents the frames in place with the top shelf removed. The book shelves are plain boards provided with cleats on the under side to prevent them from slipping out of place. To keep the books from toppling over at the ends of the shelves, sheet metal book supports are used, but it might be preferred to use additional side bars or to stretch leather thongs across the end of each shelf.

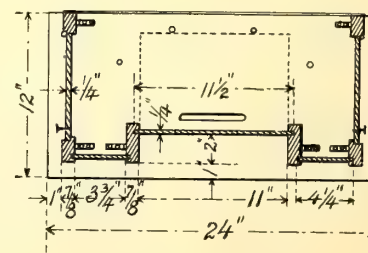
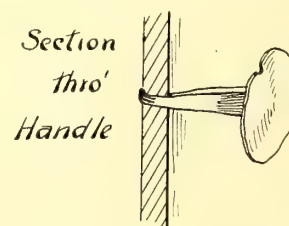
Constructional details of the clock case are shown in the sectional view A A. The clock face is set back from the panels which flank it. The uprights are held in place by means of angle braces and are grooved to receive the panel boards and dial board. A door at each side of the case furnishes access to the works. The hinges used are of the common steel pattern oxidized to match the wrought iron nails by heating them to incandescence in the kitchen range. A hand-wrought nail driven through the door against an iron surface so that its point is blunted and turned over



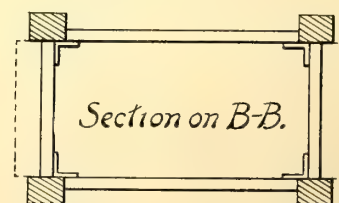
Principal dimensions of the case



A clock and bookcase combined



Section on A-A.



Section on B-B.

Sectional views and detail of knob

The combined clock and book case is severely plain, and made of solid oak, according to the dimensions shown in the accompanying drawings. The frame is fastened together with dowel pins dipped in glue and then driven into holes drilled through the posts into the shelf supports and other crosspieces. The ends of the dowels are concealed by broad headed hand-wrought nails. To further

makes a good door knob. To keep the dust out a sheet of cardboard is tacked over the back of the case.

A slot is cut in the bottom board of the case for the pendulum and four holes for the chains. To preserve the rough simplicity of the design the hour numbers were burned into the dial face and then filled with red paint. A rich brown stain completed the piece.

The Residence of Stephen L. Bartlett, Esq.,

Chestnut Hill, Massachusetts

By Paul Thurston.



THIS fine Colonial house is one recently completed at Chestnut Hill, Mass., for Stephen L. Bartlett, Esq. It stands upon a knoll well back from the roadway, with a winding driveway leading up to the portecochere built at the side of the house, while a circular walk coming in at the opposite side of the estate leads to the front door placed in the center of the building. The main living-porch is built at the rear of the house, and as the descent at the rear of the property is quite sudden, it permits of a widespread vista of the valley below and the entire surrounding country. The principal feature of the exterior of the house is the portico in the center of the front of the building, supported on fluted columns with Ionic capitals. The main building is covered with clapboards throughout, and painted a Colonial yellow, while the portico and the pilasters at the corner of the building, and all the trimmings throughout are painted ivory-white. A feature of the second story is the circular headed windows. The roof is well broken by numerous dormers built in at the face line of the building, and between these an ornamental balustrade is constructed. The main hall is entered directly from the front portico, and extends nearly through the entire depth of the house. The plan of the interior forms a systematic arrangement, and the scheme adopted is to give the rooms light from at least two sides, and as a spacious effect was desired for the interior, much space has been given to the hall. The central hall opens up through the three

stories of the house, and the staircase ascends with a sweeping balustrade to the second story. The hall is trimmed in a handsome manner with mahogany, and it has a paneled wainscoting and a beamed ceiling. The openings at all the angles in the hall have fluted pilasters with Corinthian capitals. Opposite the staircase is built the open fireplace, furnished with marble facings and hearth, and a carved mantle. The walls of the hall are covered with Japanese leather in a green effect. To the left of the entrance is the reception-room, which faces the front of the house. The room is oval in form, is stately, and is treated with yellow, white and green. Its walls are paneled. To the right of the entrance is the morning-room, which is treated in ivory-white. The walls are paneled from the floor to the ceiling, and have a pilaster effect. The pilasters are fluted, and are finished with carved capitals blending into the frieze, which extends around the room.

The room is strictly Colonial, with a low paneled wainscoting, above which the walls are covered with a crimson velvet. At one end of the room there is an open fireplace furnished with white tile hearth and facings, and a mantle with a paneled overmantel. Archways built at either side of the fireplace shorten the length of the room and give it a more uniform effect.

The library is trimmed with oak, and it has a paneled wainscoting, ceiling, beams, bookcases built in, a bay-window with a window seat, and an open fireplace with blue tile facings and hearth and mantle. The walls above the wainscoting are covered with blue burlap. The conservatory



The portico at the front of the house.

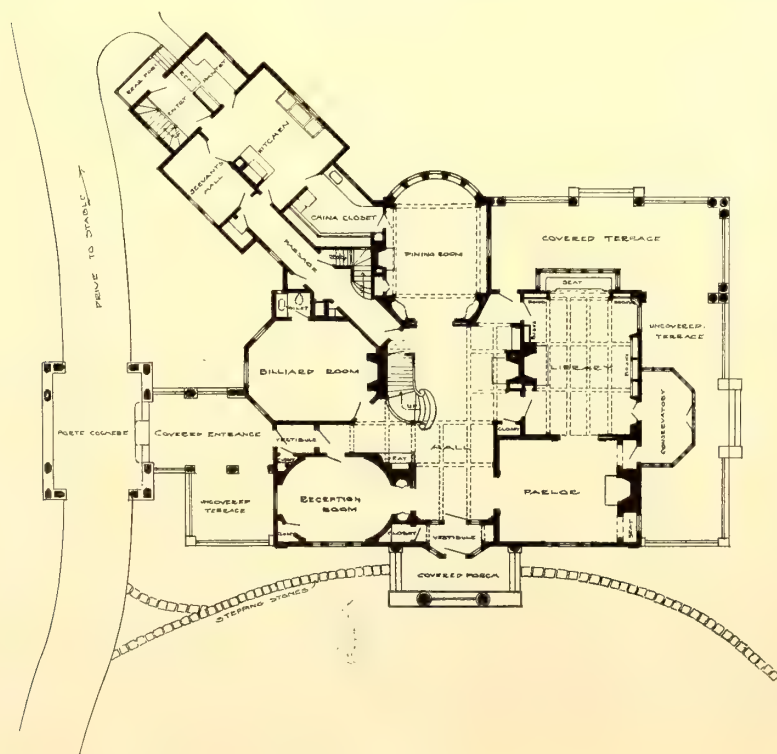


The porte cochere is placed at the side of the house.

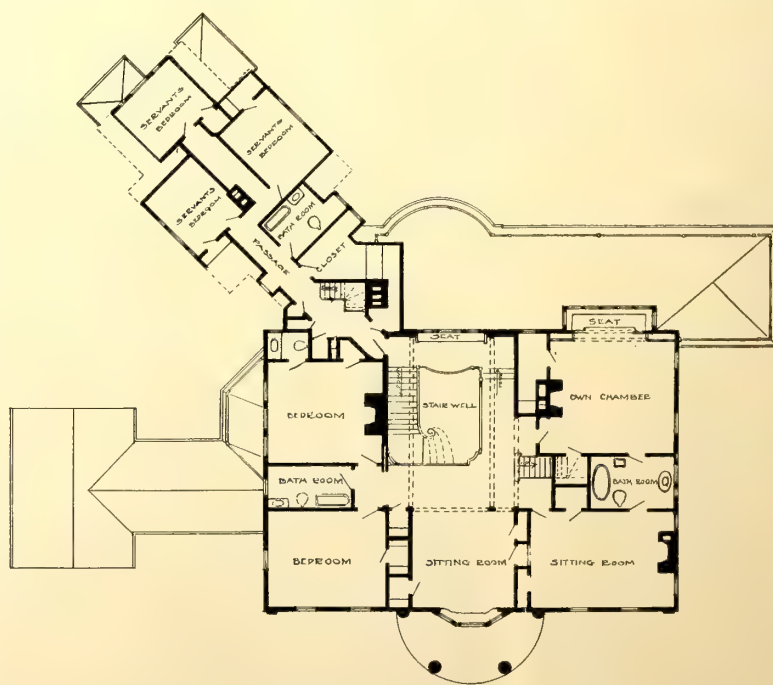
opening from the library and morning-room forms an interesting feature of the house. The billiard-room, octagonal in form, has a paneled wainscoting, above which the walls are covered with crimson burlap, harmonizing well with the green-painted trim. The fireplace has a red brick

tile facing and hearth and mantel. A toilet is conveniently placed, with an entrance to it from the billiard-room.

The dining-room is built at the end of the hall, and is trimmed with mahogany. It is planned so that each end forms a semi-circle, with a bay-window at one end occupy-



First floor plan.



Second floor plan.



The morning-room.



The dining-room.

ing the space, while at the other end are built china closets, provided with cupboards below and shelves above, and enclosed with leaded glass doors. The walls have a low paneled wainscoting of mahogany and a pilaster effect, with carved Ionic capitals, supporting a massive ornamental plaster frieze, from which springs a semi-vaulted ceiling. The fireplace has green marble facings and hearth, and a carved mantel.

The butler's pantry is well fitted with a dresser and cupboards. The

servants' hall is placed off the kitchen. There is a large entry in which the ice-box is placed, with an opening into the store pantry.

The second floor is treated in the Colonial style, with white-painted trim and mahogany doors, except the hall, which is of mahogany. At one end of the hall there is a paneled seat under a cluster of windows, and at the front there is a general sitting-room.

The south side of the house contains the owner's suite, with a sitting-room at the front and a bedroom at the rear, between which there is a bathroom furnished with a tiled wainscoting and floor, and solid porcelain fixtures and



The hall.

nickel-plated exposed plumbing. There are also two guest-rooms, and a bathroom treated in a similar manner. The servants' rooms are placed over the kitchen extension, and comprise three bedrooms and a bathroom.

The third floor contains extra guest-rooms, bathroom and trunk-room.

A cemented cellar contains the heating apparatus, fuel-rooms, laundry and cold storage.

From the porte-cochere the driveway winds itself to

the stable, which is built at one side of the property. This stable is designed in the Colonial style, and is in keeping with the main house. It contains a carriage room which provides ample space for a large number of carriages, and also a stable for the keeping of a large number of horses. Both the carriage house and stable are sealed with narrow beaded yellow pine, finished in its natural color with hard oil, and varnished. The carriage-room has a carriage wash laid in cement, and a large harness-room, in which is built a harness closet with sliding glass doors. Messrs. Charles Brigham and Willard P. Alden, of Boston, Mass., were associated architects of this house and stable.



The front of the house.



GARDEN NOTES

CONDUCTED BY CHARLES DOWNING LAY



WINDOW BOXES



WINDOW boxes are a striking addition to any house, whether in the city or the country. They seem a little more lovely in the city, however, where their brilliant color adds so much gaiety to a sometimes dull and monotonous street. They are a consolation to the dwellers in the house and a positive beneficence to the public. The owner who maintains window boxes on his city house when he himself is away, gives evidence of high citizenship and shows consideration for fellow men less fortunate than he.

It is a pity that city houses must be closed in summer for there is little more dreary than a house with dusty windows showing nothing but green shades within. If the windows could only be open, with gay colored curtains fluttering from them, and brilliantly striped awnings, and flourishing plants in the window boxes, how different and how picturesque our cities would be in summer!

In the country, too, window boxes are attractive and may be filled with a greater variety of plants than in the city, if one cares to take the trouble of frequently changing them. Any flowering plant whose roots are not too large may be transplanted to the window box, left there until its beauty is passed, when it can be replaced by something else.

When the window sills are broad, as they usually are on stone houses, a box sufficiently large can be placed on the sill and will need no fastening. On a wooden house, however, there will not be room on the sill and the blinds could not be closed, so the boxes must be supported on wooden brackets below the window.

The boxes must have holes in the bottom for drainage, and must be filled with good potting soil on top of a layer of sphagnum moss or potsherds, also for drainage.

The color of the flowers should be chosen with some regard for the color of the house. Pink geraniums rather than red, with a brick house, seems an elementary canon of taste but is often violated.

Nasturtiums, either the dwarfs for the back of the box, or the climbing kinds planted in front so that they will hang over, are very satisfactory.

The so-called German Ivy (*Senecio scandens*) is a good trailing vine in window boxes, and is almost as typical of such a situation as pansies, geraniums, lobelia, and sweet alyssum. Petunias, begonias and many other annuals and house plants may be used as the taste of the owner dictates. The main thing is to have these boxes gay and brilliant—even gaudy—and for this geraniums and nasturtiums will probably be best.

GRAFTING

One of the most delightful occupations of early spring is grafting. It is best done in late March or April before garden work is possible, but when one longs to be busy out of doors and meet spring half way, as it were.

It is constructive work and partakes of the beauty of surgery and it is one of the high refinements of horticulture.

The forms of grafting are many and have picturesque

descriptive names, such as veneer grafting, root grafting, whip grafting, in-arching, bridge grafting and cleft grafting.

The tools required for grafting are few; a sharp, wide set saw, a wide chisel and mallet, a knife, cotton twine and grafting wax. For grafting wax melt together one-quarter pound of rendered tallow, one-half pound of beeswax, one pound of resin. Pull like molasses candy until it is light colored. In using this the hands should be greased. It can usually be bought in the stores if one cannot spare the time to make it.

If you have old apple trees that bear worthless fruit you can easily rework their tops with any variety, or as many varieties as you choose, and the new fruit should be borne in three or four years. It is a much quicker way of getting a new orchard than cutting down the old trees to make room for seedlings of better varieties.

Moreover, it is an excellent way to experiment with new varieties of fruit which are thus brought into bearing very quickly.

In reworking an old tree you should not cut off big branches, leaving only a couple of stubbs on the trunk, but you should cut the branches where they are not larger than two and a half inches and cut them all at the same distance from the trunk so that the tree will still have some size, and when the scions grow, will be symmetrical and evenly developed.

The scions, which should have been buried in the earth last November, are now dug up for use.

Having selected the branch to be grafted and after sawing off at the proper place, take the chisel and mallet and split the butt left on the tree endwise through the middle. This makes the cleft into which two scions, made wedge-shaped on the ends, are inserted, one on each side. Be careful in doing this to make a good joint, and be sure that the scion is far enough toward the center in the cleft so that the inner bark of the scion and the stock meet exactly.

When the chisel is taken out of the cleft it will probably close firmly on the scions, holding them in place; if not they may be tied with waxed cotton twine.

All joints about the stock and the scion should then be covered with wax to prevent drying. The scion and the stock will not unite or sink if the joints dry out.

Whip grafting is a method used on small trees or branches. A slanting cut with a notch crosswise is made on the stock and a similar one on the scion. They are then put together, tied and waxed.

Bridge grafting is used when a tree is completely girdled by mice or rabbits. A number of scions of any variety are cut slanting at each end and of proper length to bridge the girdled part. The thin ends of the scions are then put under the bark top and bottom. The scions should be quite close, so that they will grow together in a few years. This is the only way to save a girdled tree.

Apples, pears, cherries, plums and peaches are easily grafted, though peaches are usually budded.

Nut trees can be grafted with some difficulty and many shrubs are grafted on roots of other shrubs. The lilac, for instance, is usually on privet stock.

Grafting pears on the quince makes them dwarf.

The Effect of Colored Light on Vegetation

By Frank Brown



FLAMMARION for many years has been studying the effects of sunlight upon vegetation. In his early experiments he had the assistance of M. Georges Mathieu, and he is now working in collaboration with M. Julien Loisel, at the agricultural station of Juvisy, near Paris.

In order to carry out these researches, which extend over considerable periods of time, he constructed four small forcing houses enclosed with glass. The glass of one house, which is used to establish the effect of the total solar radiation as a standard of comparison, is colorless, and the other houses are glazed with red, green and dark blue glass respectively. All these colored glasses are very nearly monochromatic, as was proved by a careful examination with the spectroscope. Thus the experiments were conducted in three well-separated regions of the solar spectrum: the red end, the middle of the green nearly coincident with the color of the foliage of most plants, and the extreme blue just within the violet. This last color was selected because it was impossible to obtain violet glass of sufficiently good quality.

The four houses are placed side by side, as shown in the photograph, in identical meteorological conditions. In order to assure uniformity of temperature, each house is provided with ventilating pipes, so arranged that the air moves from south to north, and no light is admitted through the ventilators.

In general, it was found by M. Flammarion and his assistants that growth is promoted by red light. This fact was established in regard to plants belonging to families widely separated in the botanical series, from sensitive plants and lettuce, to begonias and oaks.

Blue light, on the other hand, exerted scarcely any effect. For example, sensitive plants of the same age and height—about one inch—were planted in the four houses on August 1st. Three months later the blue house plants had hardly grown, though they continued to live in a latent and sluggish fashion. Meanwhile the plants in

the house with colorless glass had attained a height of four inches, and the plants under green glass had reached that of six inches. But the most remarkable growth had been made in the red house, where the average height of the plants exceeded sixteen inches. Moreover, the sensitiveness of the plants in the red house was increased to such a degree that the slightest movement or the lightest breath of air caused their leaves to close and even whole branches to droop. The plants in the blue house, on the contrary, had almost completely lost their sensitiveness.

Similar, though less marked effects were observed with begonias, geraniums, pansies, strawberry plants, oak seedlings, etc. In the blue house, strawberries remained edible, and almost unchanged from May to October. This result is of great practical importance, for it indicates the possibility of accelerating or retarding the growth of vegetables and the ripening of fruits by the employment of red or

blue glass. The variously colored rays affected oaks somewhat differently from the other plants. The seedlings exposed to red light made the most rapid growth of all, but the plants in the blue house grew more rapidly than the plants under either green or white glass.

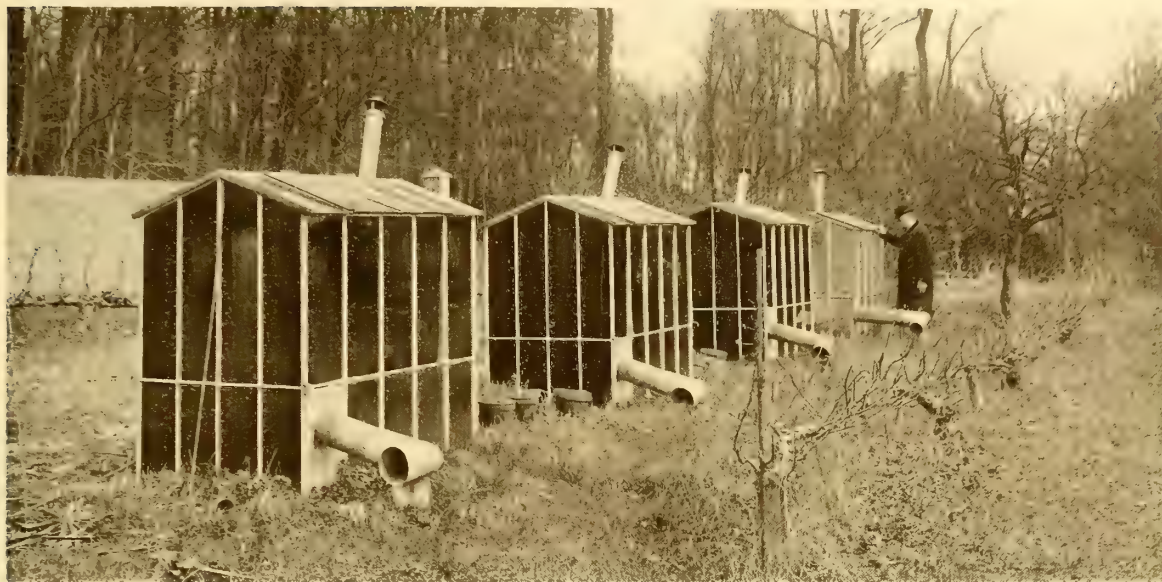
Acorns were planted in pots, at a uniform depth of one and a half inches, on March 6, 1905, and ten of the pots were placed in each of the four houses. Five plants made their appearance in the white, and the same number in the red, house, but only three in the blue and two in the green. On September 26, 1906, the average heights in inches of the plants in the various houses were as follows: Red, $17\frac{1}{2}$; blue, $10\frac{1}{2}$; white, $6\frac{1}{2}$; green, $4\frac{1}{4}$. Thus the plants under red glass were four times as high as the plants under green glass. Furthermore, at the end of February, 1907, all the foliage of the oaks in the white house had turned yellow, while only a few leaves had turned in the red house, and the foliage of the young trees in the green and blue houses remained bright green. In October, 1907, the colors of the foliage in all the houses remained as they were in February. The growth of male ferns ex-



Oak seedlings raised under glass of various colors.



Begonia plants raised under glass of various colors.



The four glass houses

hibited certain peculiarities. Very little growth was made under blue, green or colorless glass, while in the red house the plants developed rather more rapidly, but their stems were blanched. Lettuce plants in the red house sent up stalks five feet in height, while the plants under white glass remained headed, and only two feet high.

Several objections, however, suggest themselves in regard to this method of experiment. In the first place, the intensity of illumination is different in each house, the white house being the lightest and the blue house the darkest. Secondly, the temperature is subject to a similar variation, the highest temperatures having been observed under the colorless glass, and the lowest under the blue. Now, there are for each species a temperature and a degree of illumination which are the most favorable for the growth of the plant.

In order to separate the effects produced by the three factors, color, illumination and temperature, M. Flammarion repeated the experiments described above, employing screens to moderate the temperature and illumination in certain cases. By this means he succeeded in making the temperature and illumination of the red house equal to those of the white house. The luminous intensities were measured with vapor actinometers and Crookes' radiometers. The temperatures of the soil were obtained by means of self-registering spirit thermometers, the bulbs of which were buried to depths of 10, 20, 30 and 60 inches, and a horizontal self-registering instrument gave the temperature of the surface.

It was thus shown that the differences in growth in the foregoing statement could not have been due to differences in temperature, for the comparatively low temperature of the blue house was the most favorable to growth. Even here the thermometer sometimes rose to 40 deg. C. (104 deg. F.), a temperature higher than commonly used in horticulture; while those between 45 and 50 deg. C. (113 and 112 deg. F.), which were occasionally observed under the white and red glasses, appear unfavorable to vegetation. After the addition

of the screens, the differences between the temperatures of the houses never exceeded 3 deg. C. (37.4 deg. F.). In the second series of experiments, as in the first, the plants in the red house grew much more rapidly than those in the white, although the temperature was about the same in both. The radiometer showed that the illumination was the same in the screened white house and the unscreened red house. Hence the increased growth under the red glass must be attributed to a specific action of the red rays. M. Flam-

marion has also succeeded in modifying the forms, sizes and colors of flowers and leaves, and the perfumes of flowers, by the employment of colored glasses.

Geranium leaves, for example, lost their circular russet markings, and became large, deeply incised and pale green under red glass, nearly circular and dark green under the blue, and small and very pale under the green. Similar results were obtained with fruits, including peaches, apples and cherries.

In regard to the development of perfumes under the influence of colored rays, M. Flammarion observed a great increase in fragrance of strawberries under red glass. Flowers of *Crassula* exposed to the open air, either in sunshine or in shade, possess little fragrance, but flowers of the same individual plant covered with colored bell glasses develop a delicate perfume resembling the scent of the banana. When these flowers are cut and put in vases, they retain this perfume, and partially regain the red color which they lost under the colored glasses.

The various rays of the solar spectrum not only modify the longitudinal growth of plants, but affect the entire vegetative system. The roots, for example, are poorly developed under all the colored glasses, especially the blue. As the nutrition of plants depends to a great degree in the development of their roots, it is evident that the plants in the white glass house derive most nutriment from the soil. This partly explains the lack of vigor observed in the plants of all the colored glass houses. M. Flammarion has observed differences in height, vegetative activity, strength, sensitiveness, coloration and even anatomical



Self-registering thermometer for the determination of soil temperatures.

structure, in plants exposed to light of different colors. The plants raised under white glass, for example, had the strongest stems, containing the greatest number of woody fibres, the best-formed and most numerous thick-walled cells, and the smallest pith.

Finally, MM. Flammarion and Loisel have made some new discoveries in regard to the accumulation of albuminoids in plants. They planted beans in pots, which were exposed to the open air until the flowers had been fertilized, and were then distributed equally among the four glass houses. On the same day, some of the young pods, which were then less than one inch long, were analyzed. The total nitrogen was found equal to 4.5 per

cent., and the albuminoid nitrogen to 0.276 per cent. of the dry weight. Analyses of fully-developed pods, taken from the various houses one month later, gave the following results:

Color of glass	White	Red	Green	Blue
Percentage of total nitrogen.....	5.11	6.06	6.32	6.82
Percentage of albuminoid nitrogen.....	4.53	4.76	4.83	5.41

These figures show that the proportion of nitrogen is increased under colored glass, and that the greatest increase is produced by those rays which least affect the formation and activity of chlorophyll. The crop was normal under white and red glass (although the plants were blanched by the latter), and poor under the green and the blue glass.

A Novel Method of Growing Potatoes

By S. Leonard Bastin.



IN THE gardening world another instance has been found of many most valued discoveries coming to light through chance happenings. This is an entirely new method of growing potatoes for the early markets, one which is so simple and effective that it cannot fail to be universally adopted, and is certainly curious enough to be placed on record. A few years since, on a large private estate in England, a quantity of potatoes had been placed aside in a dark shed, stacked in a heap on the floor. Not being required for use, the tubers were left in that position for the best part of a year, and it was not until the autumn following that they were examined with the idea of throwing them away, it being concluded that after the long interval they could not be of any use. A few spadefuls were shoveled into the light, and it was then seen that the tubers had started to do a very remarkable thing. Every specimen was crowded with little potatoes, quite white and about the size of the tip of the little finger. More out of curiosity than anything else, a number of the old tubers was placed on a darkened shelf and left there for a few weeks. At the end of that time it was found that the small tubers had increased very much in size, being as large as walnuts.

A number of the finest were gathered and cooked, and were found to be excellent. Indeed they were pronounced by experts to be superior to the ordinary run of new potatoes, in that the consistency of the tuber was firm, but less inclined than usual to waxiness. Soon after the discovery, an exhibit of the novel mode of growing the potatoes was made at the Horticultural Show, London, and this caused a great deal of speculation as to how the new tubers were produced. Latterly a full explanation of the method has come to light, and further experiments have shown that the discovery is one which should rank as of first class importance in gardening circles. It will doubtless be of interest to outline the chief points in the treatment, which is peculiarly attractive to the country house owner.

Almost any kind of potato usually grown for keeping purposes is well suited for the novel culture. It is better to produce tubers of a good size, and when making the selection the biggest examples should be picked out. Freedom from any blemish or disease is of the utmost importance as any rotten patches on the tubers might easily spread and endanger the whole crop. The potatoes employed must be those which are technically known as "two-year-olds"; that is they are products of the previous season's yield. On this account to get the necessary stock the tubers will



Growing the potatoes under ground.



Cutting off the shoots from the tubers.



Arranging the tubers on a shelf.

have to be selected a season ahead. To those who wish to save trouble it may be mentioned that it is always easy to buy "old" potatoes in the month of July, and these will be ready for starting the following September.

It is necessary to find a perfectly dark place in which the potatoes may be stored. The absence of light is an important feature of the culture as a very little illumination, if it is regularly experienced, will make the tubers expend their energies in sending out shoots rather than in the budding of small tubers. Very good crops might be produced in a cellar or the corner of a basement; on the other hand, it would be quite a simple matter to fix up a cupboard suitable for the purpose, some rough shelves on which the potatoes may be placed. These should be arranged with a bordering which projects an inch or so above the level of the shelf.

Now obtain a quantity of fine dry mould and spread this evenly over the shelves to the depth of about an inch. The material should be clean and sweet and free from any stones.

The early fall is about the best time to start the culture of the potatoes. Even if the tubers have already been sorted, go through them again, making quite sure that none is in any way diseased. As a precautionary measure, wipe each tuber with a slightly moistened sponge, thus removing the germs of any fungoid growths which are so destructive of vegetable tissue.

If any of the potatoes have started to shoot from the eyes or growing points, the buds must be cut off, care being taken not to bruise the tuber.

Now take each potato separately and place it on the shelf, so that it is half buried in the mould. Do not allow the tubers to touch one another, and settle them all well down into the soil. There is nothing more to be done now



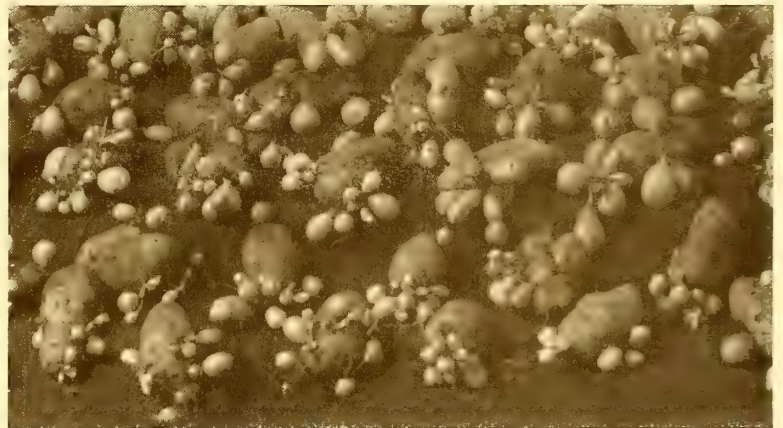
New potatoes grown by a new method

save to give an occasional glance at the potatoes to see that none is rotting. After a short while it will be observed that the old tubers are beginning to be covered with tiny white points, which a few days later resolve themselves into little potatoes, increasing very rapidly in size until they are large enough to handle, when the first instalment of the crop is ready for gathering. When all the sizable potatoes have been picked off, the old tubers may be placed in their former position, where they will go on producing. In a few weeks it will be possible to gather another crop, and this will go on through a regular succession of gatherings.

Now and again it will be found that the old potatoes will endeavor to start outgrowths and these should at once be removed.

The trouble in this direction will not be great if the apartment is really dark, the light only being let in on the few occasions when it is necessary to examine the tubers. Even then it is better, if possible, to make use of an artificial illuminant, as very little daylight seems to excite the tubers to send out shoots. It will be found that the budding off process will go on until there is nothing left of the old potatoes but dry skin. Indeed, it has been stated that the tubers will send off more than their own weight in little potatoes, though how this can be so it does not seem easy to explain.

Up to the present time the only way in which new potatoes out of season could be secured was by the costly and



A group of new potatoes.

difficult method of forcing the plants in frames. This has never been a satisfactory matter, as many gardeners can bear witness, the crops thus secured not being of particularly good quality or large in amount. Moreover, the season for the forced articles is comparatively restricted. Under the new system it is possible to have a succession of crops of new potatoes from September until about the time when the outdoor grown supply is available.

As has already been indicated, the chief points about the potatoes produced in the manner described above are that they are of excellent flavor and consistency. Moreover, they have a skin which is so thin that there is no need of scraping or peeling.

Owing to the manner in which they are produced, very little cleaning is required.

For those who are interested in the culinary side of the question, it may be useful to add a word as to the cooking of the potatoes. It is declared to be a desirable feature of the preparing that the little potatoes should be put into cold water, and then kept boiling briskly for about ten minutes. Not more of the potatoes should be gathered than can be used at one time, as they are rather likely to shrivel by keeping.



The cloth-greenhouse showing the canvas hauled close to when not in use.



The cloth-greenhouse showing the framework construction and the way it is built.

A Protected Grape-Fruit Grove in Florida

By C. M. Berry.



SIX YEARS ago my partner and I built a cloth-greenhouse at Orlando, Florida, for the purpose of growing, during the coldest months of Florida winters, strawberries, and extremely tender vegetables such as cucumbers, eggplants, peppers, tomatoes, frame-grown lettuce and beans. We had had three years' previous experience in growing these crops under cloth-greenhouses, having been forced to the protective measure by the frosts and freezes that sometimes totally destroyed such crops in the open. When we had finished this cloth-house and put in our first crop (which was lettuce, planted in September, to be followed by tomatoes in December), this proposition occurred to us:

As grape-fruit had won such a high place in the markets of the world and appeared to be the great, coming, citrus-fruit crop, and as young grape-fruit trees were frequently destroyed by cold, making it difficult to get a grove started, and the fruit on old trees was often partially or entirely ruined by freezing, why would it not be a good undertaking to grow grape-fruit under cloth-greenhouses?

We did some close figuring and found that—estimating the life of a cloth-greenhouse at ten years (we have one now that is eight years old and it will easily last two years more before the cloth will have to be renewed), the cost of protecting each tree would be \$1.25 per year. We decided that this would be cheap insurance considering that we were absolutely sure of saving our trees and fruit when out-of-door trees and fruit were injured or destroyed.

It then occurred to us to protect and grow not only these trees without a cent's cost up to the time of bearing fruit, but, to make also from \$500.00 to \$1,000.00 off the same ground while the trees were growing, by raising strawberries and vegetables on the ground at the same time. This, at first glance, looked too good, but we determined to make the experiment, so on March 8, 1904, we set out 110 small grape-fruit trees among our tomatoes.

Old orange-growers told us that the trees would never prosper as we would over-fertilize them in giving sufficient plant-food for our heavy crops of vegetables, but we did not agree with them as we claimed we could correct the over-fertilizing of the trees, granting that they did take more than they should have. As a precaution we gave the soil around each tree two pounds of sulphate of potash to counteract the effect of the high percentage of ammonia in the vegetable fertilizer and the trees thrive and grew as no

trees had done previous to the old days "before the freeze."

The second year we planted a varied crop of lettuce, strawberries, cucumbers, beans, tomatoes and cauliflowers, and the trees were given their sulphate of potash and continued to prosper despite the cries of our old orange-grower friends of—"Just wait! You will kill your trees before they come to bearing." The third year we planted again a variety of vegetables, making the double crop, as was our custom, between the months of September and May, and at the end of the summer our trees were touching the top of our seven-foot cloth-greenhouse. We then put in taller posts and raised our cover to seventeen feet, which will accommodate the trees for twenty years, as the grape-fruit tree spreads into umbrella form when the weight of the fruit begins to train the branches out and downward.

The fourth year we planted egg-plant and string-beans among the trees and gave the trees much more room than in previous years, but this crop, though only about half a crop, on account of giving the trees more ground, brought us \$300.00 and the trees were double the size of our neighbors' trees of the same age, which were being pinched back by frost and stopped in their growth during the winter, while our trees grew continuously.

In February of 1908, just forty-seven months after planting this grape-fruit nursery stock, when the beans were forming on the vines, we noticed a few bloom-buds starting on the trees and by the end of the month they were in full bloom. On December 1, 1908, the trees were loaded with grape-fruits of a very superior quality and the entire property stood free of cost with almost \$1,000.00, besides, to its credit from the sale of small fruits and vegetables.

We will hold this fruit every year until late in the spring as we do not have to gather it from the trees and rush it to market with the great bulk of green fruit that the growers as a rule get off their trees as quickly as possible for fear it will get frozen, and, naturally, we will get a fancy price for this well-matured, fine fruit. (The writer has sold grape-fruit as high as \$7.50 per box, during the month of March.) By giving individual attention to every tree we expect to make them bear from ten to twenty boxes each, per year, and with a range of price of from \$2.00 to \$4.00 per box depending upon the seasons and the weather conditions, it is easy to see that our protected grove is a very valuable property. The trees now average two boxes of grape-fruit to the tree and this is only the first setting of fruit.

The Home Vegetable Garden

By E. P. Powell.



THE country home of two to ten acres almost always has a slope or a swale specially fitted, by Nature, for a vegetable garden. By preference this should lie somewhere below the barn, where the rich drainage can be caught and fed to the plants—for nearly every vegetable is a rank eater. If the slope is sufficient, carry the liquid manure from the barnyard tank, through the beds, in perforated tiles—laid a few inches under the surface. This is an ideal way of growing your strawberries also, and anything else that needs special irrigation. It will be acceptable to celery and lettuce above the rest of the garden stuff, but it is needed in the carrots, beets, salsify and collards. Beans and corn will prefer compost of manure and ashes, with a plenty of humus, and a plenty of stirring with the cultivator. In other words, get your vegetable garden just as rich as possible.

A southeast or an east slope is bad for fruit trees, but it is the best thing for vegetables. It is all right also for berries and plums, and specially good for grapes and currants. It is not good for gooseberries, and bad as it can be for peaches. Grape trellises, standing ten or twelve feet apart, will admit two or three rows of beets or carrots between, unless you prefer to fill the vacancies with currants. At my Clinton home I grow nearly all my pole beans and my corn in open spaces among my gardens, where, in the trend of the years, I am compelled to throw out raspberries or strawberries. My potatoes also find sufficient room in such makeshift spaces. There is always a shifting of plantations for berries, and the old beds can be cleaned out best, and the worms destroyed by using them for vegetables, for a year or two.

The compost used for fruit is equally good for vegetables, and it should always be in the making. Every bit of waste material should be made use of in this manner. I buy no commercial fertilizers. There are, in my four acres of fruit and vegetables, five piles, always, made up of autumn leaves, coal ashes, barnyard manure, and what ever litter I can lay my fork upon. These compost piles are comminuted once a year, and then are fed to the bushes and plants and roots. Built up, as they ought to be, with alternate layers of loose and solid material, they do not burn up, but disintegrate very slowly—so that no perceptible ferment can ever be discovered. The result is ninety per cent. saved, instead of ninety per cent. lost, as is the case with ordinary manuring. Applied in November, and plowed under lightly in May, this sort of stuff constitutes a food thirty to fifty per cent. better than commercial fertilizers; and that which is not direct food becomes humus, and the humus is invaluable as a mulch, before it becomes soil—as it will all the time be undergoing the transformation into soil.

We are slovenly, above all things, in this matter of plant food. We allow millions of dollars to go to waste; that is we put it to no use, in the form of garbage piles, weeds, which should be gathered and composted, and autumn leaves which are burned up. All these things should be gathered as positive wealth, and into the piles should go

our barnyard manure, street waste, the rich washings in ditches, coal ashes from anthracite coal, wood ashes, old plaster and similar materials. Where there is access to muck, and other similar vegetable detritus, these also should be greedily gathered. These piles make your vegetable garden just what it ought to be, immensely rich, and able to give you two or three crops during the summer. As soon as your early peas are off put on beans, for late string beans. Late carrots and beets can also be easily grown, and where you are approaching midsummer you can put in turnips. The celery, of course, may be transplanted quite late in the season, but into the richer spots. You not only want fresh peas, beans, and corn, but you want them for a long season; and you easily can have them for a long season. Peas can be sown, for succession, until the last of June; corn, for succession, from the last of April till the first of July. My custom is to make my first planting as early in April as the ground will permit. If frost nips my beans, I replant, without grumbling. But this frosting is not as frequent as the old farmers will prophesy. I manage to keep beans in good supply until frost time, which occurs with me in early October; then I break down a few poles, and keep by them a few arms-full of straw, or hay, or litter, and by covering them on frosty nights I have string beans until well into November.

I propose a list of vegetables of the very primest sort, those that I have myself tested, and that will give absolute satisfaction—I should say up-to-date satisfaction; for in nothing have we improved more steadily than in our vegetables. I shall include in the vegetable garden the asparagus bed, and let me tell you that there is no asparagus equal to the French Giant Argenteuil. This goes under slightly different names, but it is a great improvement over the old sort, besides yielding enormous crops. One or two messes of asparagus do not satisfy a rational housekeeper. It should be on the table every noon for a month or six weeks. The stalks should be tender for six or eight inches in length, and that tough stuff served at boarding houses and hotels, with one eatable inch to a stalk, is an abomination. I set down as one of the finest modern vegetables, for table use, the new carrot. Among the best of these are the Oxheart, the Half-long Scarlet, and for late the St. Valéry. The modern beet is another vegetable absolutely revolutionized. The improved Egyptian and Laniers Superba are the best for early, and the Perfected Half-long, or Fords, is the best late winter beet. Of the lettuces I do not know one variety that will give more satisfaction than the little Mignonette. It makes solid little balls, and very quickly. May King and Golden Gate I have found to be specially fine.

Everyone should have a bed of curled-leaved parsley, and as for spinach I consider it one of the most delicious spring foods. Any radish seed will do; but for spinach plant New Victoria. Those who grow tomatoes should have the golden and the red on the same plate; take Golden Queen and Livingston's Favorite. I always add some of the plum-shaped sorts, for preserving and pickling. Of the squashes the very perfection, for late use, is Delicious, started by Mr. Gregory, who first sent out the Hubbard.

Write down this list of peas, and you will not go amiss; for very early Gradus and Thomas Laxton—and for later take Heroine and Improved Stratagem. None of these need brushing. A good housekeeper needs a few herbs, and a few peppers. One of the most important is summer savory. As for corn, I use my own cross-bred varieties; but as you cannot get these, I recommend the White Mexican and the Black Mexican, for their richness of quality. I think you will improve them both if you let them mix. The black sort is latest. When it comes to beans, once more I use my own hybrids. These are mostly crosses of Horticultural and Lima, of which I have started over five hundred sorts—retaining only about a dozen for cultivation. The pods are about six or seven inches in length, and two or three in circumference—solid white. These, cooked pod and all, in their prime I hold to be the best vegetable in existence. The catalogues offer you something of this sort, and one of mine can be found in Vick's catalogue.

Anyone who has once pulled from his own ground fresh vegetables, of these improved sorts, will never be quite content with the stuff which is most generally found in market. Nowhere else has a change in sorts and in quality gone on more surely. My advice is that you try but very few novelties, when they are first advertised; yet try a few. Every

catalogue maker is bound to offer you something novel each year—generally no improvement at all, or worse. But never forget that half the pleasure of a vegetable garden is in the growing of it. Do not turn loose into it hired help, any further than you absolutely must. Get up early in the morning and fuss with your plants. You will learn something new every day, and by and by you will feel utterly lost if you cannot have your morning drill with the beans and corn. At the same time, be sure to be experimenting in the way of creating something new. Try your hand at a new sort of corn or beans or peas; but it is best to make a specialty and concentrate your efforts. Cross-breeding is not a difficult affair. You have only to grow, in close proximity, two or three sorts, and nature will do the mixing. Then you select one or two of the very finest ears for seed, and each year you will get something new. Reject almost everything, selecting and preserving for planting only the choicest, and along this road there will be steady improvement. Mr. Livingston has given us a long succession of grand tomatoes; others are working among the corns, while others are improving celery and lettuce. Our future vegetable garden will be something as far ahead of the present as the present is ahead of the stock planted by our forefathers in New England.

The Double Flowering Cherry

By D. Z. Evans, Jr.

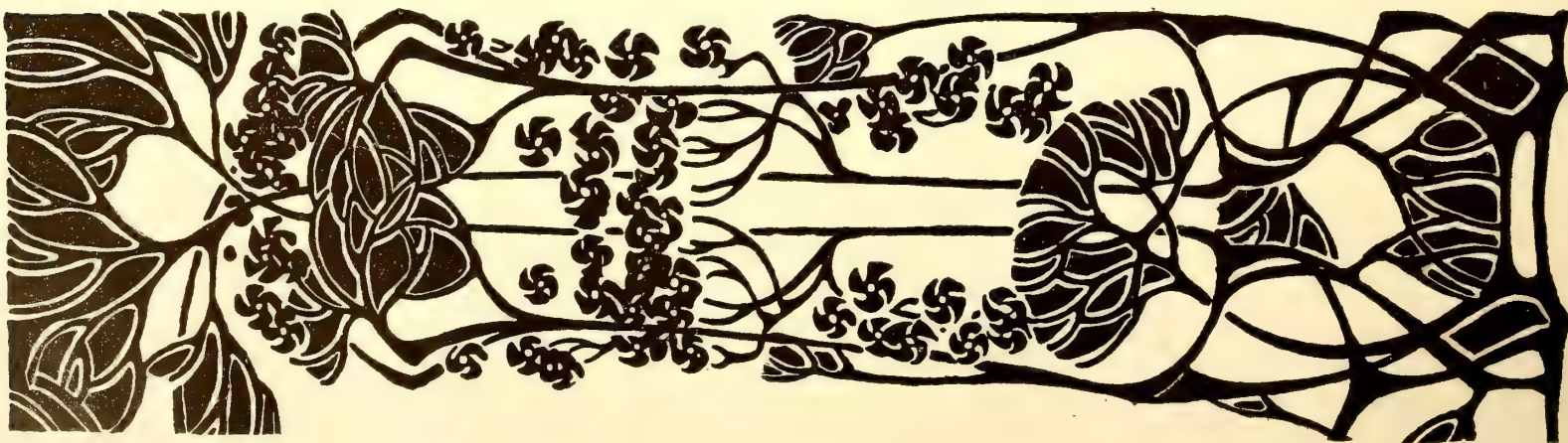


IN A large lawn, where a showy, handsome tree is desired, one really out of the ordinary, and one second only to the magnolia in point of beauty, my choice is that of the double flowering cherry. Why these trees are not more often seen is no doubt due to the fact that they seem to be so very little known, especially in the north, though I have seen a number of them in the spacious southern lawns, in all their striking beauty.

This tree is a true cherry in all its general characteristics of growth, form and leaf, differing only in seldom if ever producing fruit. In fact, I have never known one to fruit at all, though I have heard of one or two not well authenticated cases where a few cherries have been found on such trees. The tree is a fairly rapid grower, producing a beau-

tiful shapely head, and annually yielding a great profusion of large and beautiful double flower blossoms, which when fully developed, resembling a miniature rose and having the long cherry stems. They are hardy, easily grown, and why the nurserymen and florists do not push the sale of this beautiful tree seems strange. They come into flowering when from three to five years of age and are much longer lived than the ordinary cherry, perhaps for the reason that they do not have to stand the strain of fruiting.

One of the largest and handsomest trees of this kind that I ever saw was several years ago, and it stood in the lawn of an old time southern homestead, in Cecil County, Maryland. It was then some fifteen years old, and being in full bloom, its strikingly beautiful appearance made it conspicuous amongst the many handsome native and foreign trees and shrubs scattered over the capacious grounds.





CORRESPONDENCE



The Editor of *American Homes and Gardens* desires to extend an invitation to all its readers to send to the Correspondence Department inquiries on any matter pertaining to the decorating and furnishing of the home and to the developing of the home grounds.

All letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this Department.

Problems in Home Furnishings

FURNISHING AN UP-STAIRS SITTING-ROOM

IN MAKING the front bedroom on the second floor," writes a Philadelphia subscriber, D. C. R., "into a family sitting-room we are at a loss as to the floor treatment. Of course, we would prefer a hard wood floor with rugs, but as we do not own the house we would not put this expense into a permanent fixture. Unfortunately, the boards are not in condition to leave exposed and the question is how to cover them tastefully and also at not too great an expense. The floor space is fifteen by eighteen feet."

A room of this size will require thirty yards of floor covering if it is a yard wide, and for the narrower width of twenty-seven inches a larger amount will be necessary. Matting costs from thirty-five cents a yard to seventy-five cents, and the most substantial variety is the Chinese at fifty-five cents a yard. For a sitting-room that is occupied during the winter it is better, however, to have something heavier than matting. A heavy cotton filling that comes in the yard width at forty-five cents a yard may be made a plain background for rugs; or, the wool filling at ninety cents will give a more lasting wear. The wool nichols is another plain filling in a heavy weave at \$1.25 a yard.

An attractive floor covering at \$1.25 a yard, in the twenty-seven inch width, is a mottled brown tapestry Brussels. This looks almost like a wood carpet. Mottled velvets at \$1.75 a yard are liked where a plain color is too delicate. Wilton carpets will endure the hardest wear and the patterns are the most interesting of any domestic carpets. These cost \$2.75 a yard.

A QUESTION ABOUT WINDOW CURTAINS

From Brooklyn, N. Y., comes an inquiry about window curtains. S. W. H. writes: "We are in a state of perplexity with the different shapes and sizes of the windows in a house we have rented for a term of years. The hall and living-room are divided by pillars only and therefore we would like to curtain all of the windows alike; but there are French windows to the floor, low windows to accommodate window seats, casement windows with leaded glass opening outward, besides the ordinary kind with sliding sash."

The idea of curtaining this hall and living-room alike is a good one, but the variations in shape and size will necessarily require some modification of the plan. An ecru net of as good a quality as may be afforded (filet is the most expensive), may be shirred on the window-doors, and also hung to the sill at the other windows, with the exception of the casement windows. The best way to treat the casement win-

dows—as shades are not practical—is to hang a short curtain of an opaque silk or a sun-fast material, at each side, drawing this across the glass at night. At the other windows a thick over curtain may be added for the winter months, unless there are too many windows to make this undesirable.

WOODWORK FOR A BUNGALOW

"In the bungalow that I am building on very simple lines the dining- and living-room open into each other in such a way that they almost seem like one room. My dining-room furniture is mahogany and for the living-room I have dark or fumed oak. This makes the problem of the color for the woodwork difficult. What shall I do?"—F. D., Long Island.

Mahogany is too fine a wood for a summer home of the bungalow type, and it will be impossible to secure a really harmonious interior with the present arrangement of the two rooms. If the dining-room furniture could be of fumed oak the woodwork could be the same in this room and the living-room. If the mahogany furniture must be retained the woodwork may be stained a weathered gray, and hangings put up to soften the difference in the woodwork, as the living-room should be made a background for the brown furniture, using there a stain as nearly like the latter as possible.

AN INTERESTING PARLOR

A suburban reader, H. F. K., is desirous of making her parlor more attractive. Describing this room, she says: "We have bought fairly expensive furniture for this room, but the effect as a whole is decidedly unattractive. No one stays in the room and even the most formal caller is immediately brought into another part of the house. There is an Oriental rug on the floor showing dark blue, mahogany color and yellow. The woodwork is painted white, and the fireplace tiling is a shaded yellow. The chair seats are of French brocade of different colors and the wall paper is a flowered effect. We are willing to make some changes if you can assure us they will be for the better."

Taking the rug with its touch of yellow and the tiles around the fireplace that accent this color as a starting point, the color scheme for this room may be changed to advantage, using a Japanese grass cloth on the wall in a warm yellow tone. The lace curtains are worth retaining, adding long over curtains of shadow taffetas (about three dollars a yard), in yellows, old red and ivory. These would look well hanging in straight lines at the sides of the windows. A lamp of good design with a pretty silk shade would also bring color into the room. The coverings on the chair seats could be of brown panne velvet.

Garden Work About the Home

WE HAVE read catalogues until we dream of climbing vines, weeping trees, and hideous dwarfs, and in despair we come to you for advice. What shall we use about our small house? All our neighbors plant hydrangea, Japanese barberry, and red spiraea—must we do the same?"

To this call for help the editor of *AMERICAN HOMES AND GARDENS* replies as follows:

SOME UNCOMMON SHRUBS

There are a number of shrubs, native in the Northern States, which are seldom seen on small places (unless by chance they are growing wild), but which should be used instead of the more gaudy plants which are so common in the nurseries. Perhaps the reason for this is that we have not reached the point where we admire a shrub for its beauty as a whole, but demand large and showy flowers, which often go with an uninteresting habit, or thin foliage.

The whole aspect of a shrub throughout the year should be considered, when selecting it, rather than its casual beauties when in bloom.

The bayberry, for instance, has inconspicuous flowers, yet it is one of our handsomest shrubs because of its deep rich color, lasting well into November, the soft, reddish gray of its dense branches in winter, and the solid, picturesque masses of its foliage in summer. The althea, on the other hand, has little to recommend it, except its brilliant flowers. The foliage is poor in color, and thin. It comes out late, and falls early, without much change of tint. The branches are stiff, and, worst of all, it never mingles with its neighbors, but is as marked in the shrubbery as a country gawk in the ball-room.

Native shrubs, of course, have a more complete harmony with the landscape than the exotic plants. They blend with the grass and the trees and with their companion shrubs more perfectly. This is especially noticeable in winter, as one may see by comparing the soft haze of purple in an old pasture where the gray bushes are sprouting with a plantation say of *Forsythia viridissima*. The bushes seem to suit our atmosphere, all but the *Forsythia*. The native shrubs also endure the hardship of our seasons with better grace.

The choke cherry, *Pyrus arbutifolia*, is a charming shrub, growing five to ten feet high, sending up many suckers from the roots and forming thick clumps. The leaves are small, upright, good in color. The small white blossoms coming from the leaves cover the branches, and are followed by little red fruits (black in *P. nigro*), which persist through the winter. In autumn the leaves begin to turn early, and pass through wonderfully brilliant shades of crimson, scarlet and red.

(Continued on page xii)

BURLINGTON Venetian and Sliding BLINDS



Venetian Blind for inside window and outdoor veranda. Any wood; any finish to match trim.

SCREENS AND SCREEN DOORS

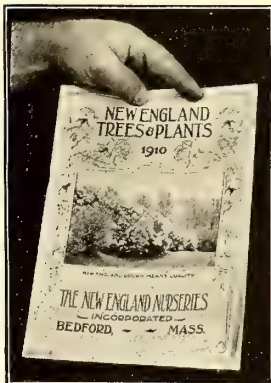
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MAKES GRASS GROW

Prices. 2 lbs., 25c.; 5 lbs., 50c.; 25 lbs., \$2.00; 50 lbs., \$3.50; 100 lbs., \$6.00.

Quantities. If very weedy 1 lb. to 40 sq. ft.; 25 lbs. to 1000 sq. ft. (20x50). Half amount if moderately weedy.

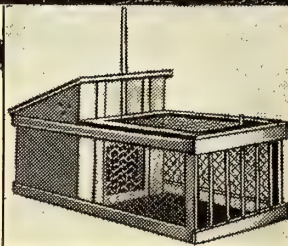
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It is a shrub that can be used in large masses without becoming tiresome, and it would look well in company with barberry and roses. It is inexpensive, costing ten to fifteen cents in large quantities, and it can be collected from the open fields cheaply and with little loss. It will endure much in the way of dry, poor soil, and after the first year will take care of itself.

The beach plum (*Prunus maritima*) is another good native to use in large quantities. It will grow in the poorest soil, in pure sand on the coast, or gravelly banks inland. Its early flowers are white or sometimes pinkish. The foliage is rough, dark, sometimes becoming rusty. The fruit is not only good in jellies and jam, but is magnificent in color, which ranges from the unripe green, through red purples, to blue black. It is borne in great quantities. The branches have the characteristic shining red bark of the plum-cherry family. Many people who are familiar with the beach plum as it grows along the coast do not realize what a good plant it is inland.

The American roses are as remarkable for their flowers as they are desirable for their beauty at other times.

R. Carolina grows to eight feet, and likes moist ground. It is often seen in swamps where wild iris grows. *Rosa ulcida* grows to six feet. It makes few suckers, and has good foliage. The pips stay plump and red all winter.

R. Lucida alba is a variety with green stems and white flowers. It should be planted with *Rosa multiflora* or *serigera*, rather than with its red-stemmed relatives.

R. blanda is five feet high, with few prickles or thorns. This and the next do well in dry places.

R. humilis, three feet high.

R. nitida, one and a half feet high.

These roses could be planted in the order given, beginning with *Carolina* at the back, and stepping down to *nitida* in front, and they would form an impenetrable thicket, beautiful at all seasons. Throughout the summer there would always be flowers, beginning with *blanda* in May, and all the others in June and July, ending with the last blooms of *Carolina* in August.

The viburnum family is a large one, and all our native varieties are excellent. They range in size from *V. Lenago* (30 feet) to the little *V. acerifolium*.

The best are *molle* and *dentatum*, with large rough leaves in gold masses, good color and texture; *prunifolium*, *cassinoides*, *pubescens*, lower with pear-shaped shining leaves; and *acerifolium*, low with leaves like the maple. All have white flowers in flat cymes and berries that are ornamental much of the year. They should be planted in groups as above, adding *V. opulu* to the first group for its fruits, and no shrubs could be better as a border plantation, as a screen along a road, or as an under shrub in thin woods. All turn well in the fall, *dentatum* and *molle* lemon-yellow, *prunifolium* and *cassinoides* orange and *acerifolium* deep purple. They grow well in moist places, and could be used near lakes with *clethra* and *cephalanthus*.

Aesculus parviflora (*Ae. marcrostachya*) grows from four to ten feet high, branching to the ground and forming a rounded mass fifteen to twenty feet in diameter. It reminds one of the horrid *Catalpa Bungei*, grafted low, but it is really a handsome shrub, lighter and more graceful than the ordinary horse chestnut, and very striking in July and August, when its white, spiry flowers beyond the line of foliage make it look like a cake with candles. Nothing would be better to plant singly on the lawn or in a prominent position near the house.



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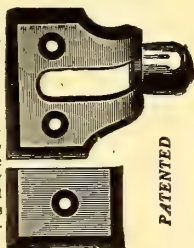
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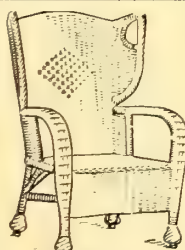
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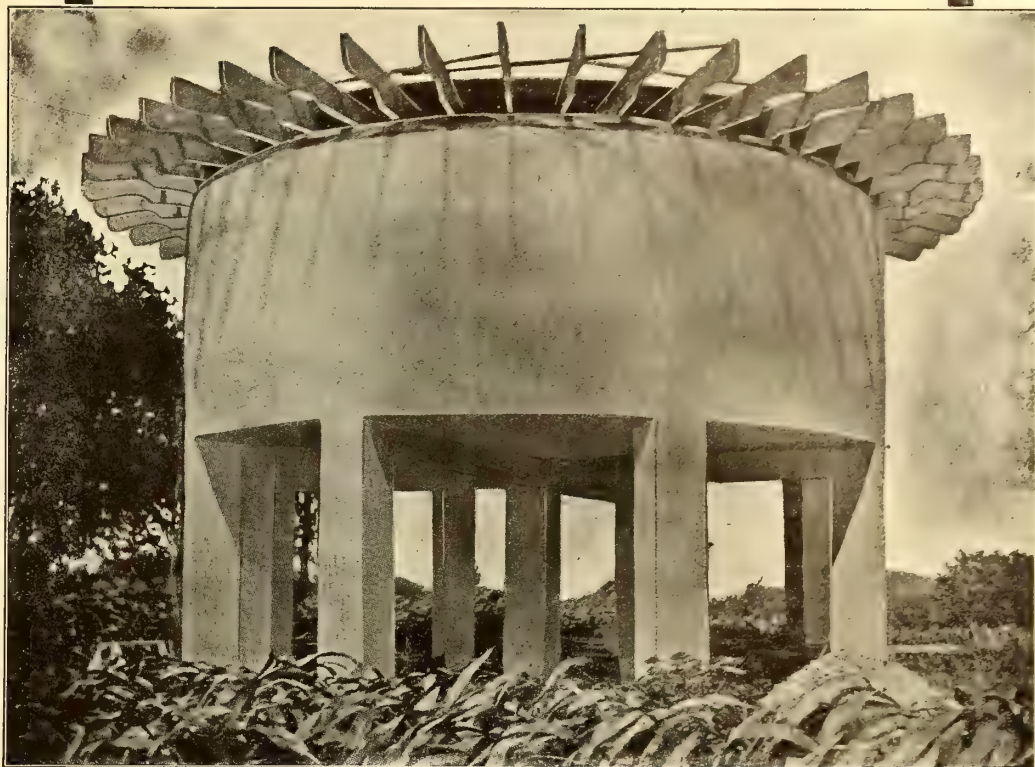
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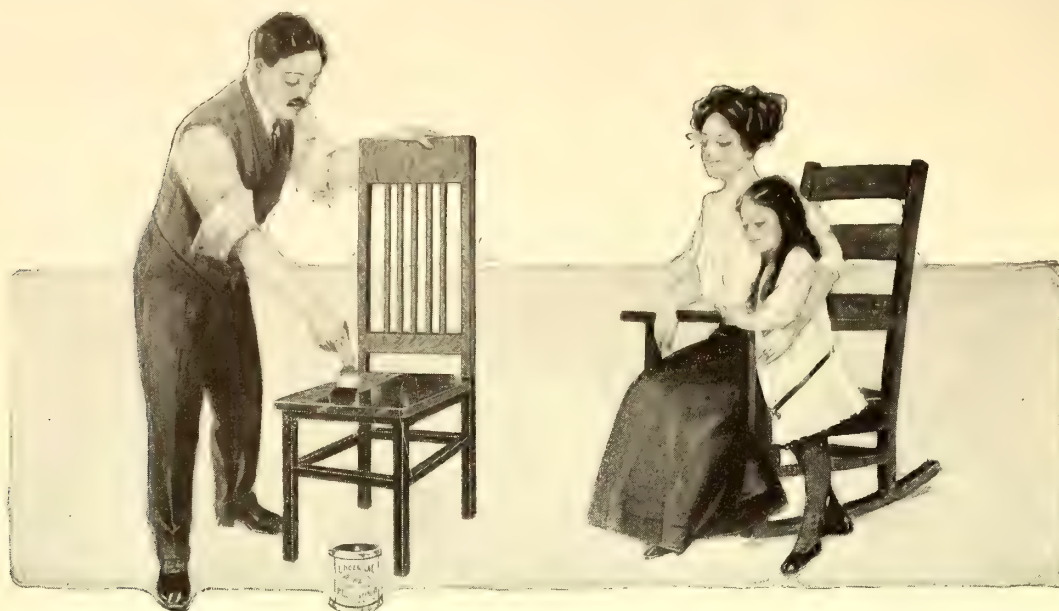
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PEPPER CULTIVATION IN INDIA

THE pepper plant—*Piper nigrum*—which produces the white and black pepper of commerce, is a climbing vine-like shrub, growing wild in the forests of Travancore and the Malabar coast of India.

It is extensively cultivated in southwest India, whence it has been introduced into Java, Sumatra, Borneo, the Malay Peninsula, Siam, the Philippines, and the West Indies.

The use of pepper was known to the ancient Greeks and Romans as early as the time of Alexander the Great, and at one time occupied an important place in the world's traffic, being a staple article of commerce in the early trade between Europe and India before the days of cotton, tea and sugar. The price of this spice during the Middle Ages was exorbitantly high, and its excessive cost is said to have been one of the inducements which led the early Portuguese navigators to seek a sea route to India.

Pepper is entirely tropical in its requirements, and seems to thrive best in a moist, hot climate, with an annual rainfall of at least 100 inches and a soil rich in leaf mold.

The plant is a natural climber and will cling to almost any support by means of adventitious roots. It grows some 20 feet in height, but in cultivation is usually restricted to 10 or 12 feet. The native Kanarese, in the gardens of the southern district of the Bombay presidency, train the pepper vine to the "supari" palms.

The leaves are glossy, broadly ovate, with five to seven nerves, and grow opposite and alternate to a pendulous spike 5 to 8 inches long, containing 20 to 30 white flowers that ripen into a one-seeded fruit, with a fleshy exterior. This fleshy berry, covering a soft stone, is about the size of a pea, and is at first green, but in ripening turns red and then yellow.

The berry contains a resin, to which it owes its hot, pungent taste, and a volatile oil that gives off an aromatic scent. It has few medicinal qualities, its principal use being as a condiment.

The white pepper is the black pepper decorticated by maceration and rubbing. The plant produces fruit in three years, and is probably at its best for the next seven or eight years. It is claimed that there is a difference between the plant grown from the seed and the one raised from cuttings, the former bearing fruit for several years longer than the latter, though the pepper from the plant raised from cuttings is said to be superior in both quality and quantity, and hence this method is more frequently adopted.

A single palm or tree sometimes supports eight or twelve vines, giving an average annual yield in good seasons of about one thousand spikes to the vines on one palm. These spikes or clusters of berries vary in size, but one thousand should yield on an average five pounds of dried pepper. An acre is reckoned to bear 2,500 plants, to cost about \$20 in outlay, and to yield a product of \$400 when in its best condition.

Mr. J. W. Mollison, director of agriculture at Poona, gives in a very interesting paper an account of the cultivation of pepper in the Kanara gardens of the Bombay presidency. Of the two ways of propagating the plant—by layering or from cuttings—he claims the former is preferable.

When the palms have been seven or eight years permanently planted, pepper is planted at the roots of the trees. If a long, healthy vine from an established plant can be stretched to reach the root of the palm, this vine is layered in the leaf-mold manure



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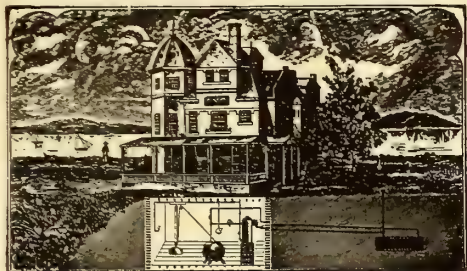
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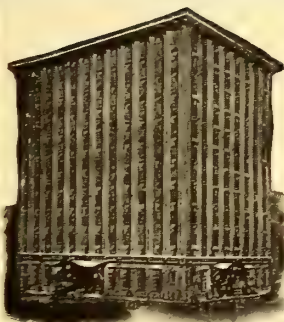
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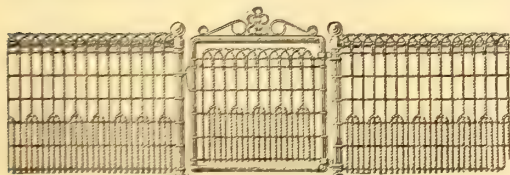
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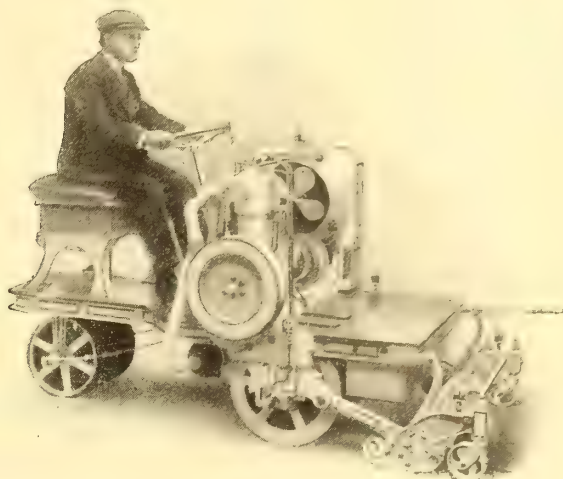
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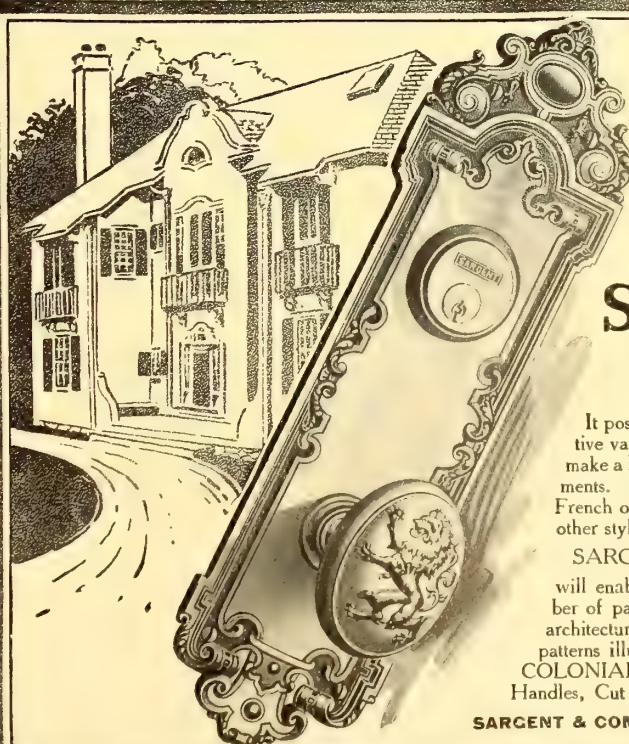
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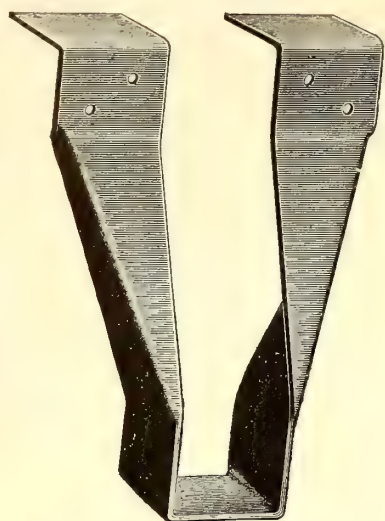
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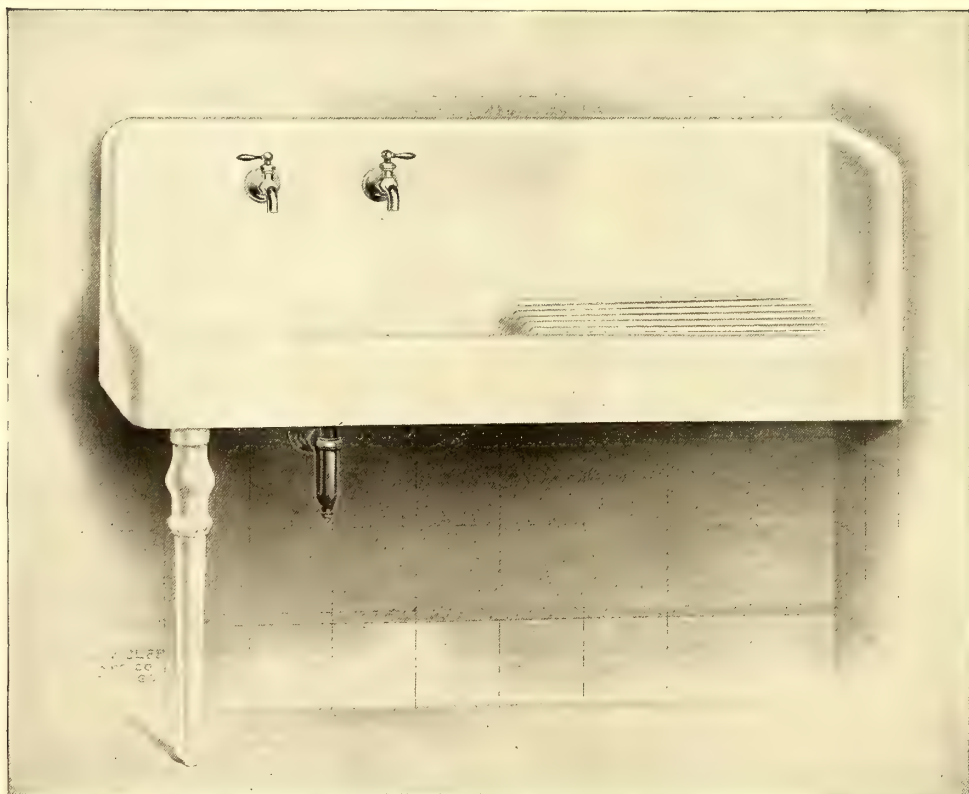
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which surrounds the root of the palm. The pepper vine takes root freely in this manure and when it has done so it is severed from the parent vine and trained on the palm stem.

The young pepper plant grows rapidly. The main vine should branch freely into subordinate vines so that a number can be trained up the palm. They are fully secured to the stem by bands stripped from the sheaths of the fallen leaves of the palm. The main and subordinate vines grow up the tree to a height of 5 feet or more per annum. Luxuriant growth and free branchings are encouraged by heavy applications of good manure given annually for three years after planting.

Subsequently, the pepper plant participates in the general cultivation given to the palms, and an application of manure is given for both crops every second year. The best manure for pepper, supari palm, and all other crops of the garden is made from green leaves plucked or pruned in the monsoon and used as litter in the byres where buffaloes and other cattle stand, and thence removed to a deep manure pit every day with the excrement of the cattle. This manure is sufficiently decayed by the following March, and is applied in that month or in April.

The foliage of healthy plants is, from the ground upward, fairly dense, but in an established plantation some of the older vines die. If new layers are substituted for old and worn-out vines, the plantation should keep in vigorous growth and bearing for a long period.

The flowers appear in July and August and the berries about seven months later. The yield depends upon liberality in manuring, upon proper management, and upon the rainfall.

The plant, the flowers, and the fruit are delicate, in the sense that they may be damaged by rough handling; therefore, ladders are used when the vines are bound to the palms and the berries plucked. The ladders are straight, single bamboos, with the alternate side branches cut off a foot from the stem. These provide the steps of the ladder. A wooden hook is rigidly attached at the top end of the ladder and secured to the palm above the level of the tallest pepper plants.

The bunches are plucked by hand and placed in an oblong cane basket, slung horizontally behind the workman by a rope around his waist. The rounded ends of the basket extend a little on either side, so that the basket can be easily filled by either hand of the workman.

When plucked, all the berries in the bunch may be fully ripe, but ordinarily the bunches are plucked when the berries are mostly green and just changing in color. The berries may or may not be sorted as they are plucked. If they are sorted, those fully ripe are separated. These are soaked in water for seven or eight days or heaped, so that the pulp ferments, and are then rubbed by hand or on a coarse cloth if the quantity is small, or trampled under foot if the quantity is large. The pulp is thus rubbed off the inner stone. This stone furnishes the white pepper of commerce. The pulp is completely removed by washing in baskets in running water. The pepper is then dried by exposure to the sun for about a week. This has also a bleaching effect, and the pepper becomes a pale gray or pale drab in color. It can be bleached whiter by a chemical agency. This white pepper is prepared only to a limited extent in the Kanara forests.

The chief product is black pepper. It is got from unsorted berries, which are heaped

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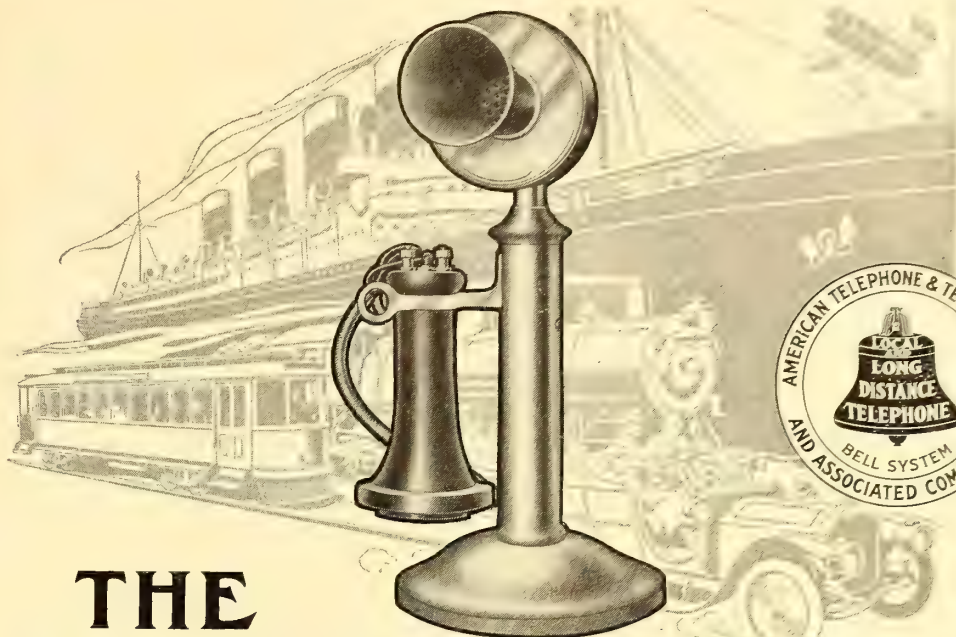
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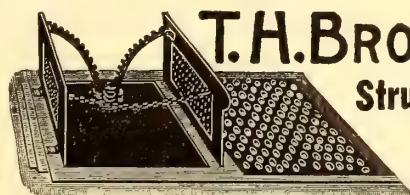
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up for four days. The green berries then get softer and change color, and the pulp is more or less squashed. The berries are then spread out and dried. The skin and part of the pulp adhere as a dark-colored, dry, wrinkled covering to the stones, and the pepper is black in appearance.

White pepper is less pungent and more expensive than black, but is preferred by many from its not being readily seen in the food. The pepper produced on the Malabar coast of India stands high in grade and brings the best price in commerce.

I have not at hand sufficient data to determine even approximately the quantity of pepper produced in southern India. It is certainly a very large and important product. The natives use it freely to season their rice and curry, and no doubt as much is consumed locally as is exported.

During the year ended March 31, 1902, there was exported from Bombay to Indian ports, such as Calcutta, Madras, Rangoon, Karachi, and to Kathiawar, Portuguese Goa, Kutch, Gaekwar State, and other British and native states in India, 3,163,826 pounds of pepper of a value of \$343,805.

During the same period there was exported from Bombay to foreign countries 2,487,883 pounds of pepper, valued at \$277,914.

The total of the coastwise and foreign exportation of pepper shows a production above the supply for local consumption of 5,651,709 pounds of a value of \$621,719.

It may be of some interest to state that of the exports, Egypt took 608,000 pounds; Aden (and Arabia), 767,000 pounds; Persia and Asiatic Turkey, 800,600 pounds—or of all the pepper exported from Bombay to foreign countries, about 90 per cent. was consumed by the four countries named.

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are the best made, best grade and easiest riding buggies on earth for the money.

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Write for Our Free Book on Home Refrigeration

This book tells how to select the home Refrigerator—how to know the poor from the good—how to keep down ice bills. It also tells how some Refrigerators harbor germs—how to keep a Refrigerator sanitary and sweet—lots of things you should know before buying ANY Refrigerator.

It tells all about the "Monroe," the refrigerator with inner walls made in one piece from unbreakable SOLID PORCELAIN an inch thick and highly glazed, with every corner rounded. No cracks or crevices anywhere. The "Monroe" is as easy to keep clean as a china bowl.

The "Monroe"

Most other refrigerators have cracks and corners which cannot be cleaned. Here particles of food collect and breed germs by the million. These germs get into your food and make it poison, and the family suffers—from no traceable cause.

The "Monroe" can be sterilized and made germlessly clean in an instant by simply wiping out with a cloth wrung from hot water. It's like "washing dishes," for the "Monroe" is really a thick porcelain dish inside.



Always sold DIRECT
and at Factory Prices.
Cash or monthly payments.

NOTE CAREFULLY The Solid Porcelain Monroe is so costly to manufacture that but few could afford it if sold through dealers. So we sell direct and give our customers the dealers' 50 per cent commission. This puts the Monroe within the reach of the MANY, at a price they can afford.

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We will send the Monroe to any responsible person anywhere to use until convinced. No obligation to keep it unless you wish to. The Monroe must sell itself to you on its merits.

The high death rate among children in the summer months could be greatly reduced if the Monroe Refrigerator was used in every home.

The "Monroe" is installed in the best flats and apartments, occupied by people who CARE—and is found today in a large majority of the VERY BEST homes in the United States. The largest and best Hospitals use it exclusively. The health of the whole family is safeguarded by the use of a Monroe Refrigerator.

When you have carefully read the book and know all about Home Refrigeration, you will know WHY and will realize how important it is to select carefully. Please write for the book today.

Monroe Refrigerator Co., Station P, Cincinnati, O.

THE PRODUCTION OF A BLACK COLOR ON BRASS

BY ERWIN S. SPERRY.

MUCH difficulty is often experienced by platers and other brass workers in the production of a satisfactory black color on brass. This would, perhaps, appear somewhat ridiculous, inasmuch as brass will of its own accord oxidize to a black color, if left for any length of time. Oxidized silver, which was much in vogue at one time, greatly stimulated the production of a similar finish on brass, and the same method was employed, but usually with unsatisfactory results. In the oxidization of silver the property of tarnishing by sulphur compounds is made use of, as the ready susceptibility of this metal to such influences is sufficient to render the process quite satisfactory. Silver is very easily blackened by sulphur and its compounds, and all that is necessary to do is to bring it in contact with a solution of potassium or sodium sulphide (liver of sulphur), when an immediate blackening takes place. The same method used on brass produces a black color, but not entirely satisfactory, as it is wanting both in color and in depth. If allowed to remain for a long time, in order to obtain a deep black, the coating does not appear to adhere, but scales off. These difficulties render the employment of sulphur compounds in blackening brass more or less unsatisfactory, and much trouble is found in their use. Those who have attempted their use have usually abandoned the method in favor of others.

The solution now generally employed for the production of a black or oxidized surface on brass is a solution of carbonate of copper in ammonia. The work is im-



THE new residence of Mr. P. M. Sharples, West Chester, Pa., sketched above, is pronounced "a perfect example of the complete home." Its completeness is shown in its generous refrigerator facilities—two large built-to-order McCray Refrigerators—one of which, the cold room refrigerator, is shown at the bottom of this page. This refrigerator is white opal glass lined and arranged for icing from the outside. The other refrigerator is in the butler's pantry and is in every sense an integral part of the house as it is finished to match the adjoining wood work. Mr. Sharples selected our refrigerator plans on the recommendation of Charles Barton Keen, his architect, who has had long experience with the leading makes of refrigerators. The character of

MCCRAY Refrigerators

is conclusively shown by the character of the residences and other buildings in which they are being installed. Specially designed and built-to-order McCray Refrigerators are in use in the Capitol at Washington, on the recent U. S. Battleships, and in the Pure Food Laboratories of the U. S. Department of Agriculture.

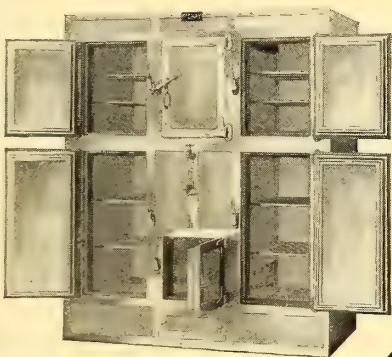
Write for "McCray Refrigerators in American Homes" which shows McCray Built-to-order Refrigerators in 19 recent American homes of the better class, and for any of the following catalogs that interest you:

Catalog No. 87, Regular Size Refrigerators for Residences; No. 67, for Groceries; No. 59, for Meat Markets; No. 48, for Hotels, Clubs and Institutions; No. 72, for Flower Shops.

MCCRAY REFRIGERATOR COMPANY

87 LAKE STREET

KENDALLVILLE, INDIANA



Electric Garden Hose

Will Not Crack,

Split, Burst or Kink

Try to do this with any other Garden Hose, and see what will happen.

There is not—and cannot be any other hose like "Electric." All important processes of its manufacture are protected by basic patents.

A jacket of heavy cotton seine twine is **woven**—**WOVEN**, mind you, **not wrapped**—over a tube of pure rubber. Next, a second tube of rubber—same quality—is put on over the cotton jacket. Another mantle of seine twine is **woven** round the second tube. A third tube—same quality—is put on over the second cotton jacket.

Each of the 5 alternating sections of rubber and of cotton is a complete hose in itself. The hose is then incased in metal tubes or moulds 500 feet long, and liquid under high pressure put inside of the hose and locked in. The whole is then put in a sealed oven and live steam turned on it. This steam heats the liquid, causing it to expand, forcing the hose against the metal tube, and the hose in this way has an internal pressure applied of 500 lbs. to the square inch. The 3 rubber tubes and the 2 woven cotton jackets are amalgamated or vulcanized by the pressure; converted into a single or unified fabric of mingled rubber and cotton.

Begin to understand why "Electric" is different from a hose that consists of 2, or even 3, strips of common rubber glued on a piece of canvas and then wrapped or "lapwelded" into a tube that a child can tear apart with its fingers.

Before it leaves our factory, every foot of Electric Hose is tested by a water pressure of 400 lbs. to the inch. Ordinary hydrant pressure averages from 30 to 50 lbs.—and frequently bursts every make of hose excepting "Electric."

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Cottage Designs

THESE books offer to architects, builders, homeseekers and investors by far the most complete collection of plans ever brought out, while the price is so low as to place them within the reach of all who have an interest in the building of homes. The designs are compiled with a view to representing all grades of cost, from the simplest types of cottages, as illustrated in the first series, to the comparatively elaborate structures reaching to \$10,000 or more, in cost, treated in the fourth series, so that examples are given covering nearly every requirement, with respect to cost, in inexpensive homes.

No. 1. Cottage Designs with Constructive Details

A series of twenty-five designs of cottages, most of which have been erected, ranging in cost from \$600 to \$1,500; together with the details of interior and exterior finish, all drawn to convenient scale, and accompanied by brief specifications. Illustrated with 53 full-page plates of floor plans, elevations and details.

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Embracing upward of twenty-five selected designs of cottages originally costing from \$1,000 to \$3,000, accompanied with elevations, floor plans and details of construction, all drawn to scale, together with brief descriptions and, in many instances, full specifications and detailed estimates of cost. Illustrated by 61 full-page plates of floor plans, elevations and details.

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A selection of twenty designs of artistic suburban dwellings erected in various parts of the country, at costs ranging from \$2,800 to \$7,000; embracing floor plans, elevations and constructive details, showing interior and exterior finish, and drawn to scale, together with extracts from the specifications. Illustrated by means of half-tone reproductions, from photographs of the completed structures, and 61 full-page plates of floor plans, elevations and details.

No. 4. Suburban Homes with Constructive Details

Comprising twenty selected designs of attractive suburban homes, ranging in cost from about \$3,000 upward; embracing floor plans, elevations and constructive details, showing interior and exterior finish, all drawn to scale, together with extracts from the specifications. Illustrated by means of half-tone reproductions from photographs of the completed structures, and 75 full-page plates of plans, elevations and details.

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Our whole experience has so convinced us of the desirability of pumping tires up **hard** that we are going to devote some space telling you about this rather than Diamond tire construction.

**THE
ALREADY
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DIAMOND
DEMOUNTABLE
RIMS**

This is particularly true of the **overloaded tire**, and four-fifths of all tires are frequently overloaded.

As makers of the tire recognized as the **standard**, we are duty bound to tell you that with Diamond or any other pneumatic tires you will not get the most for your money if you fail to keep tires pumped up **till they stand round under a full load**. This is the only safe rule. Pressure gauges don't provide for the **overloaded tires**.

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If anybody needs or deserves rooms just right to live in, to play in, to sleep in, it is the little folks. In spite of all precautions, the old-fashioned heating methods soon begin to leak or force ash-dust and coal-gases into the living rooms, and the loved ones are made to breathe burned, devitalized air, totally unfit for the lungs. Whereas Hot Water or Low Pressure Steam heating with

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will supply pure, warm air to every room in the house in all kinds of weather. These outfits are used exclusively in hospitals, sanitariums, laboratories, colleges, greenhouses, etc., where correct heating and ventilation are an absolute necessity. IDEAL Boilers and AMERICAN Radiators are made in such small sizes, yet with equal completeness, that they are now put into thousands of cottages, houses, stores, etc., at prices easily within reach of all. These outfits soon save their cost by cutting down the fuel bills and absence of repairs; while their cleanliness halves the housework and saves much wear on carpets and furnishings.

Do not wait until you build that new house which you may have in mind. See that your present



A No. C-241 IDEAL Boiler and 555 ft. of 38-in. AMERICAN Radiators, costing the owner \$250, were used to Hot-Water heat this cottage.



A No. 3-22 IDEAL Boiler and 400 ft. of 38-in. AMERICAN Radiators, costing the owner \$195, were used to Hot-Water heat this cottage.

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home is warmed as you know it should be, and it will rent for 10% to 15% more, or sell quickly at a higher price when you leave it. IDEAL Boilers and AMERICAN Radiators are a high-paying investment—not an expense.

Prices are now most favorable, and you get the services of the most skillful fitters. Don't put it off till the soon-coming Fall—write us to-day for free valuable book which tells fully all the hows and whys of IDEAL-AMERICAN heating.

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If you do not know Tobey Handmade Furniture you are unacquainted with a kind of furniture which is conceded by many of the foremost authorities to be the finest that is being made in the world today.

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THE TOBEY FURNITURE COMPANY

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mersed in it and allowed to remain until the required tint is produced. The carbonate of copper is best used in the so-called plastic condition, as it is then much more easily dissolved. Plastic carbonate of copper may be purchased, but if one wishes to make it, the following method answers well: Make a solution of blue vitriol (sulphate of copper) in hot water, and add a strong solution of common washing soda to it as long as any precipitate forms. The precipitate is allowed to settle and the clear liquid is poured off. Hot water is now added, and the mass stirred and again allowed to settle. Again the clear liquid is poured off, and the operation of adding water, settling, and pouring off repeated. This is continued until everything has been washed out of the green carbonate of copper, which remains in the bottom of the vessel. Six or eight times is usually sufficient to remove the impurities. After the water has been removed during the last pouring and nothing is left but an emulsion of the thick plastic carbonate in a small quantity of water, liquid ammonia is added until everything is dissolved and a clear, deep-blue liquid is produced. If too strong, water may be added, but I have found that a strong solution works better than a weak one. If it is desired to make the solution from commercial plastic carbonate of copper, the following directions may be followed: Dissolve one pound of the plastic carbonate of copper in two gallons of strong ammonia. This gives the required strength of solution.

The brass which it is desired to blacken is first boiled in a strong potash solution to remove grease and oil, then well rinsed and dipped in the copper solution, which has previously been heated to from 150 to 175 deg. F. This solution does not work well cold, and if heated too hot gives off all the ammonia. The brass is left in the solution until the required tint is produced. The color produced is very uniform and black. It also holds tenaciously and does not readily peel off. After the desired color is produced, the brass is rinsed and dried in sawdust. A great variety of effects may be produced by first finishing the brass before blackening, as the oxidizing process does not injure the texture of the metal at all. A very satisfactory finish is produced by first rendering the surface of the brass matt, either by scratch brush or similar methods, as the black finish thus produced by the copper solution is then dead—one of the most pleasing effects of an oxidized surface. Various effects may also be produced by coloring the entire article and then buffing off the exposed portions.

The best results in the use of this solution are obtained by the use of the so-called red metals—i. e., those in which the copper predominates. The reason for this is quite obvious. Ordinary sheet brass consists of about two parts of copper and one part of zinc, so that the large quantity of the latter somewhat hinders the production of a deep black surface. Yellow brass is colored black by means of the solution, but if the very best results are desired, it is well to use some metal having a reddish tint, indicating the presence of a large amount of copper. The varieties of sheet brass known as gilding or bronze work well. Copper also gives excellent results. Where the best results are desired on yellow brass a very light electro-plate of copper before the oxidizing, works well and gives an excellent black. With the usual articles made of yellow brass, however, this is rarely done, but the oxidation is carried out directly.



A. G. Richardson, Architect

Our book of Concrete Residences will prove an inspiration to any who anticipate building

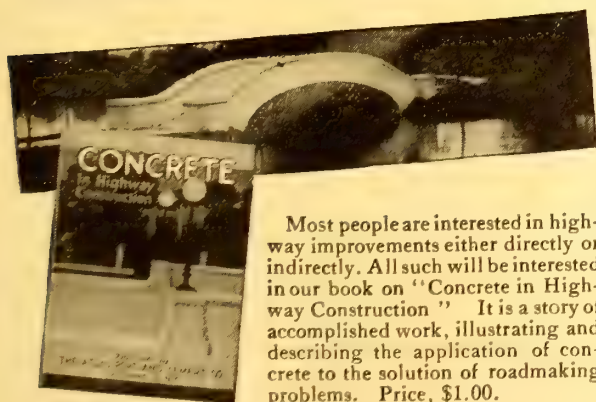
It is a large, handsomely printed book, showing over a hundred splendid examples of modern residences, and giving complete descriptions and floor plans.

These houses are all built with some form of concrete—solid concrete, concrete blocks or stucco. You should see what has been done with this durable, adaptable, economical fireproof material. The book is a liberal education, not only in regards to concrete but also in regard to cement, on which the success of concrete depends.

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because it is the standard brand—the purest, most uniform in quality, and the surest in results. Atlas is made only of genuine Portland Cement Rock. It contains no surface slag. It is the brand the Government bought for the Panama Canal.

The book, "Concrete Houses and Cottages," is in two volumes. Each contains over 120 illustrations. Either will be mailed on receipt of \$1.00.

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Do You Care Enough For Your Trees To Have Their Lives Prolonged?

YOU DO, if you love trees—if their majestic beauty calms your restless spirit when the cares of life weigh heaviest; if their cooling shade and the gentle rustle of their leaves bring solace in your weary hours; if the laughter of their branches makes happier and brighter the hours when your home means most to you.

Like every lover of trees, you have been moved by feelings of admiration and of pity as you watched the gallant but unsuccessful struggle for life of some giant tree—perchance a priceless heritage from loved ones long since passed away—as it gave way to the insidious advance of internal decay, or was torn and wounded by the storm king.

The Life of *That* Tree Might Have Been Saved: Almost Every Tree's May Be by Proper Methods!

A tree lives a very real life; it breathes and has a circulation. Its digestive organs perform their functions, and its process of reproduction is beautiful and inspiring. Because a tree has life, it is subject to disease and decay. Under normal conditions it remains healthy; perversion of these conditions leads to ills and afflictions which must result in the tree's death unless they are properly treated and cured.

Since it cannot speak, the tree suffers in silence—but it suffers none the less. A tree has its enemies, just as does any other form of life. Storms, fire, insects, animals, diseases—above all, the “tree butcher”—increasingly menace the life of the tree as it becomes a part of our complex civilization, with its congestion of population and multiplicity of devices for rapid communication and transportation.

With the transition from the conditions approaching the natural, under which the trees thrived comparatively unmolested, to those in which it is surrounded by countless enemies, however, there has come a new understanding of its nature and a new science for its salvation. Years were required to perfect it—years of patient study and experiment by a man to whom the trees are as brothers.

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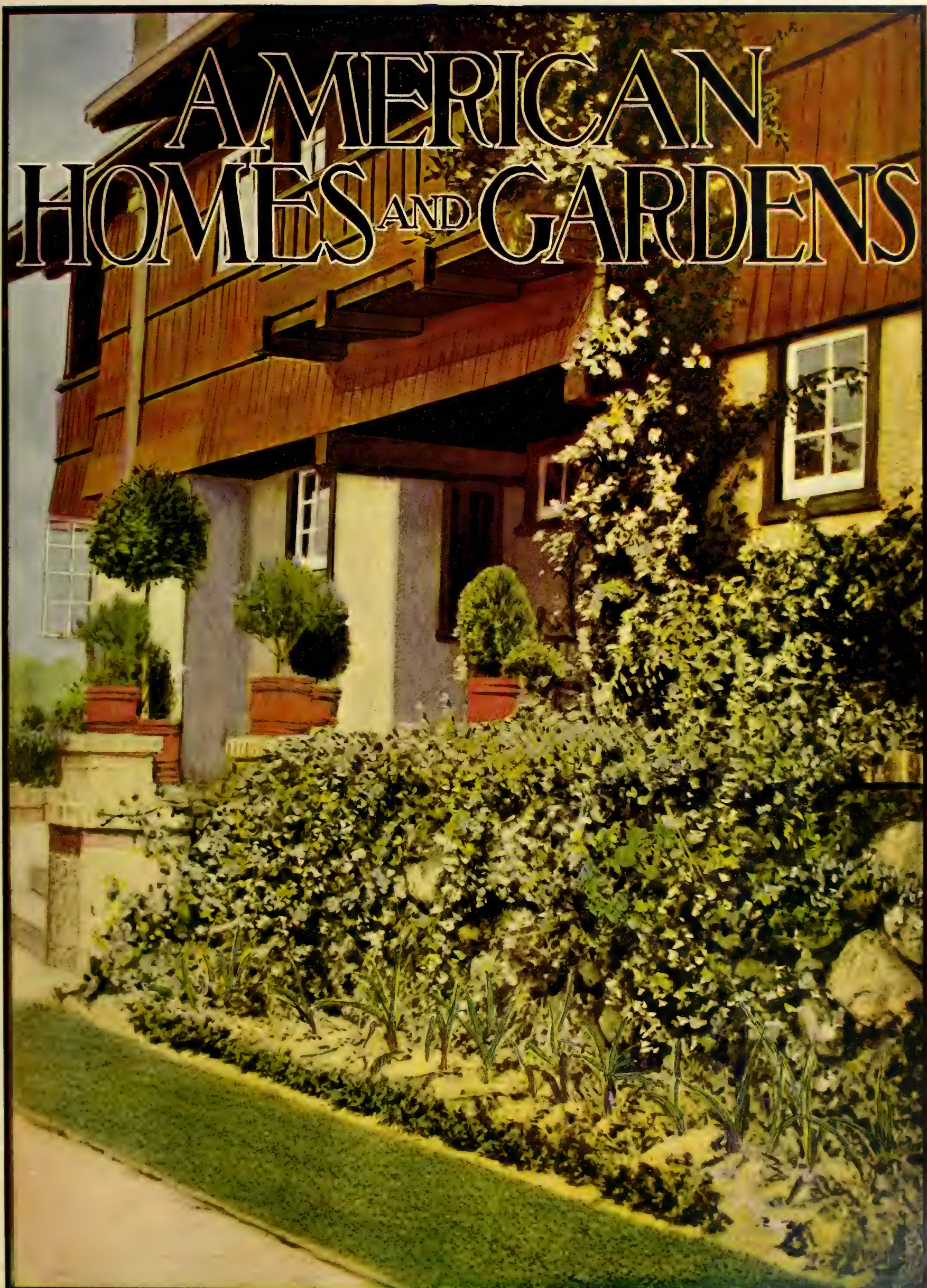
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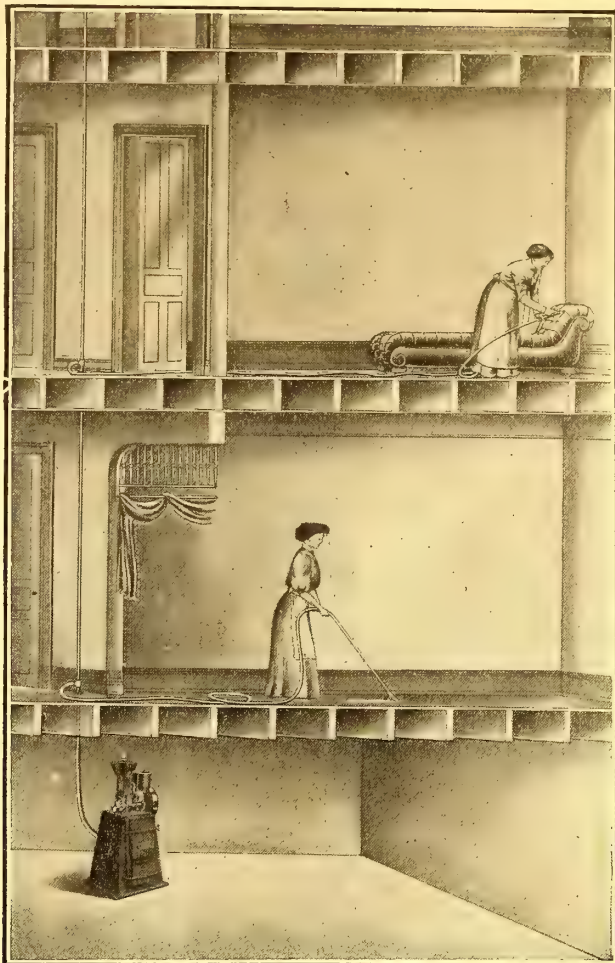
AMERICAN HOMES AND GARDENS

MAY, 1910
Vol. VII, No. 5

MUNN AND COMPANY, Inc., Publishers

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\$3.00 A YEAR

The Victor Vacuum Cleaner for the City House or the Country House



Not a portable toy machine, but a real vacuum cleaner, which can be installed in any house, *city or country, old or new.*

Electric Current Not Necessary, but it can be used if you have it.

The vacuum pump is placed in the cellar (stationary), and is driven with an electric motor, or with a small especially designed and very handsome engine using gasoline or city gas.

A polished nickel-plated stand pipe is run up through the house, with a *hose connection at each floor.* All dust is taken down to receptical in cellar (the pedestal on which engine or electric motor rests is the dust receptical), which has sufficient capacity for cleaning the entire house several times without emptying. The entire outfit is absolutely first class, and is the very best vacuum cleaner ever made.

Don't clean house Spring and Fall in the old antiquated way any longer, just keep it clean by the weekly use of a Victor.

It is impossible, without actual experience, to appreciate just what it means in actual comfort, satisfaction and saving of expense to have a Victor Cleaner in your house. It is never necessary to take up carpets or rugs, the weekly use of a Victor will take all the dirt off of the carpets, out of them, and from under, and will keep carpets or rugs absolutely clean and in a sanitary condition. Sweep days are no longer a terror, the work is easily and quickly done and without any dust.

If you have used a small portable machine, you perhaps have found it some improvement over the broom and brush, but you have also found it very unhandy, bothersome and inefficient. The great noise and the vibration set up by a portable electric cleaner makes their use impossible in most instances and disagreeable in every case. Then the dust tank must be disconnected, carried out and emptied every few minutes. They are too heavy to carry around upstairs and down, the lamp sockets are continually burnt out, the power is insufficient and they are unsatisfactory in every way. With a Victor these conditions are reversed, and you have an apparatus that is a permanent fixture, handy, efficient, easily operated, does perfect work, will clean an entire house without stopping, and the use of which will be of more real comfort to everybody in the house than any other one thing you can possibly buy. Can be installed in a few hours by anyone. No threads to cut on pipes.

Price for everything complete, ready to set up in house, **\$250.00**, including engine or motor, dust tank, vacuum hose, nickel-plated stand pipe, full set of nozzles, tools, wrenches, oil cans, etc. Order now. Send for catalogue.

VICTOR CLEANER CO.

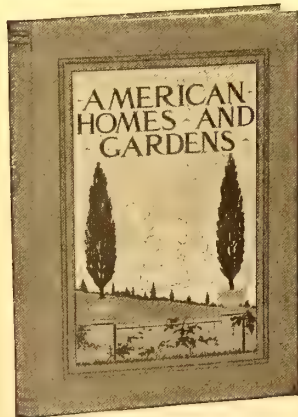
YORK, PENNSYLVANIA

BOUND VOLUMES OF AMERICAN HOMES AND GARDENS, 1909

494 Pages :: 1274 Illustrations :: Price \$5.00

American Homes and Gardens covers a very wide scope; it deals with house building from the design and construction of the modest house on small lots, to the building of mansions on large estates. All degrees of gardening from laying out of landscape to the planting of a window-box are dealt with. Practical questions of water supply, of sanitation, or the arrangement of the kitchen receive equal treatment, with draping of windows or the arrangement of old china.

American Homes and Gardens is beautifully printed. The year's volume contains more than 1,200 engravings, which are as full of detail and finish as actual photographs. They depict some of the old and historic mansions of America, and the most beautiful gardens or of natural scenery. The following list of a few of the practical articles which appear in *American Homes and Gardens* during 1909 will show the wide choice of subjects:



Notable American Homes (7 descriptive articles). Homes of American Artists (5 descriptive papers). What Really is Colonial Architecture. The Beauty and Economy of Stucco. Flower Box Beauty. Window-Curtaining for the Bedroom. Birds in the Country Home. The Bungalow and its Furnishing. Children's Playhouses. Concrete Ornaments for the Garden. Concrete in the Building of the Small Country House. Decorative Features in the Small Home. A French Model Dairy. Evolution of the Small House Plan. Furnishing the Nursery. Problem in House Furnishing. Garden Work About the Home. Garden Notes. The Farming Experiment of a Woman. Model Motor Houses. Plumbing for a Small Country House. Wayside Inn. What Can be Done with a Hand Loom. The Craft of Hammering and Piercing Metal. Practical Suggestions for Domestic Ventilation. Revival of an Old Handicraft. Handmade Rugs. New Developments in Stenciling. Colored Windows in the House. Wild Mushrooms. Wall Gardens.

A limited number of volumes for 1908 are available. 494 pages. 1,100 illustrations. Price \$5.00. A volume for 1907, \$5.00. Volume for 1906, \$5.00. Volume 1905, \$3.50.

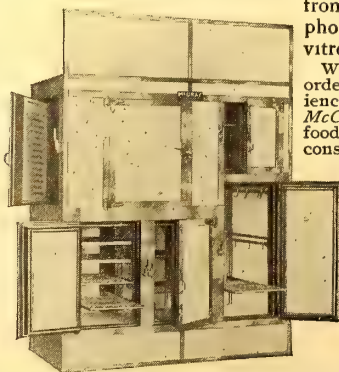
MUNN & CO., Inc., Publishers, 361 Broadway, New York



THE SELECTION of a built-to-order McCray Refrigerator for the handsome residence of Col. G. G. Pabst, Milwaukee, Wisconsin, illustrated above, is another notable endorsement of the McCray System of *Sanitary Refrigeration*. The McCray Refrigerator was chosen after a thorough investigation into the merits of all leading makes, and it preferment is in line with the intelligent discrimination which was responsible for every detail of this remarkable residence.

McCRAY Refrigerators

are used in the Capitol at Washington, in the Pure Food Laboratories of the U. S. Department of Agriculture, on recent U. S. Battleships, and in most of the exclusive clubs and fine residences throughout the country. The Refrigerator in the Pabst residence, here illustrated (our No. 7672) is a fair type of these installations. It is built flush with the pantry wall, and arranged for icing from the outside. Exterior is opal glass with phosphor-bronze trimmings; interior, opal glass with vitreous tile floor and aluminum sliding shelves.



Well-to-do people have their refrigerators built to order because they secure the maximum of convenience and adaptability in that way. They select the *McCray Refrigerator* solely because of its superior food-keeping properties, due to the McCray patented construction. The same system of construction is used in all McCray Refrigerators, including the stock family sizes.

Write for the Free Book, "How to Use Leftover Foods"—by Elizabeth O. Hiller, and for any of these free catalogs:—No. A. H. Built-to-order for residences; No. 87 regular sizes for residences; No. 67 for Groceries; No. 59 for Meat Markets; No. 48 for Hotels, Clubs and Institutions; No. 72 for Flower Shops.

McCRAY REFRIGERATOR CO.

87 Lake Street, KENDALLVILLE, INDIANA

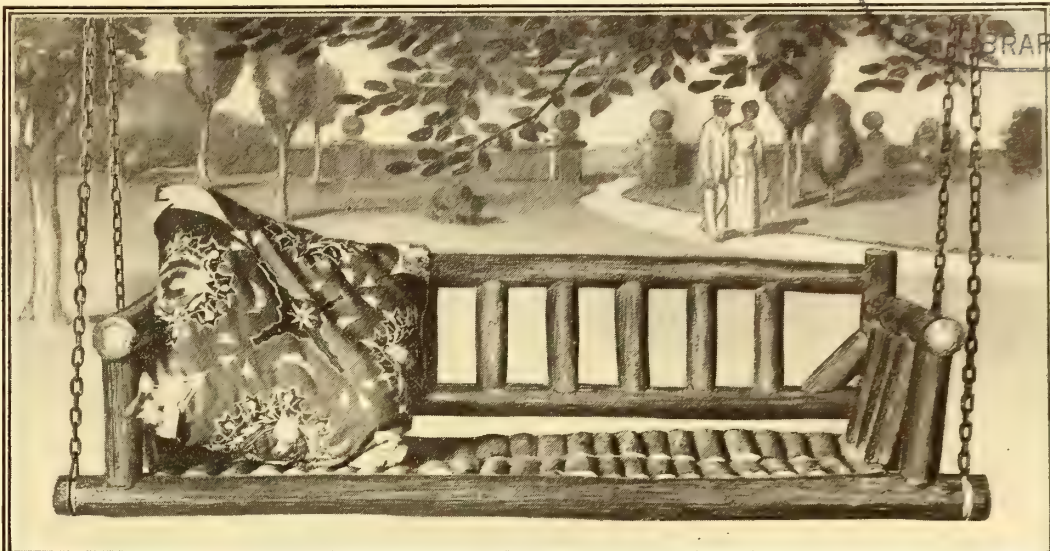


Q Much of the charm of the old Colonial room was due to the prismatic rays of the cut crystal together with the soft light of the candle or lamp. This same quality, in a lamp of this kind, is just as valuable to-day when lighted with the more modern illuminant—electricity.

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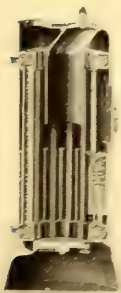
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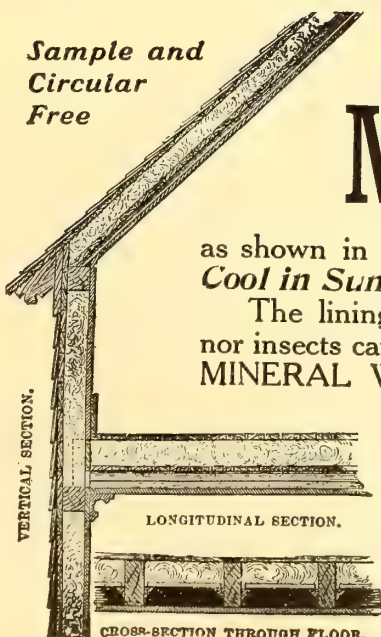
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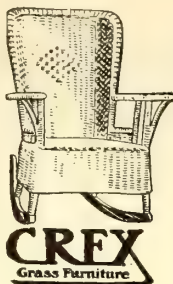
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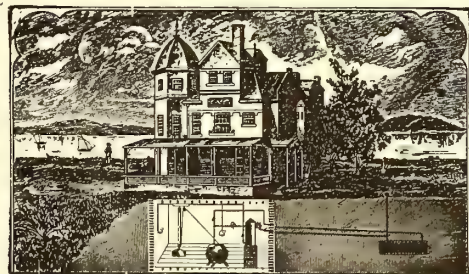
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BOOK REVIEWS

VILLA FRANZ VON STUCK, MUENCHEN.
By Fritz von Ostini. Verlags-Anstalt.
Alexander Koch, Darmstadt, Germany.
31 illustrations; 32 pp.

Franz von Stuck is an artist of the modern Munich school, and one of the pioneers of the artistic secession movement in Germany. His daring paintings and statues have been the subject of comment on both sides of the water. In this beautifully printed and excellently edited publication will be found a sympathetic description of the wonderful villa which Mr. von Stuck has designed for himself—a real artist's home. If ever a dwelling reflected the personality of an artist, surely it is this wonderful villa.

The house in question is built on Gasteig-Hohe, in Munich. This happily conceived and homogeneously designed structure, with its straight lines and definite classicism, reflects the artist's personality to a degree. Although antique in appearance, the dwelling is monumental. It stands aloof, as it were, very much like the artist himself. It is complete in itself, utterly independent for its effect upon its surroundings.

An artist famous for his skill in clay and on canvas would naturally decorate his home artistically. It is therefore not to be wondered at that the interiors exhibit many a splendid example of the artist's own work, besides its examples drawn from classic antiquity. Perhaps the best opinion which has thus far been delivered on this wonderful house is that recently uttered by Professor Wilhelm Kreis:

"This dwelling has had a far greater influence upon the architectural education of the young German architect than was at first conceived to be possible; it was not until a number of prominent architects followed the direction in which Stuck had struck out that the significance of Stuck's theory was really recognized. The effect of Stuck's work upon the young Viennese architects is certainly pronounced."

Mr. von Ostini has presented the architectural and artistic features connected with this dwelling in a manner worthy of a splendid subject.

THE WATER SUPPLY, SEWERAGE, AND PLUMBING OF MODERN CITY BUILDINGS. By William Paul Gerhard, C.R.
New York: John Wiley & Sons. London: Chapman & Hall, Ltd., 1910.
8vo.; 493 pp. Price, \$4.

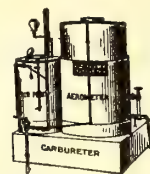
The present work is an extremely valuable one. The engineering problems connected with the modern city building are very complicated. The chapters, while correlated to each other, are purposely so written that each one is complete in itself and each one may be read or studied without reference to the others. The book is excellently illustrated by means of helpful diagrams and half-tones. The titles of the chapters are as follows: Essential Features of the Hydraulic and Sanitary Engineering of Buildings. Sanitary Fixtures and Appliances. Advanced and Simplified Plumbing. Plumbing in its Relation to Disease and Municipal Control of Plumbing. Domestic Water Supply. The Water Supply of Large Modern City Buildings. The Maintenance of Pipe Systems for Sewage, Gas and Water. Rules on Plumbing, Water Supply and Sewerage, chiefly for Hospital Buildings and other Public Institutions. Mr. Gerhard has an international reputation as a sanitary engineer, and this book may be looked upon as authoritative.

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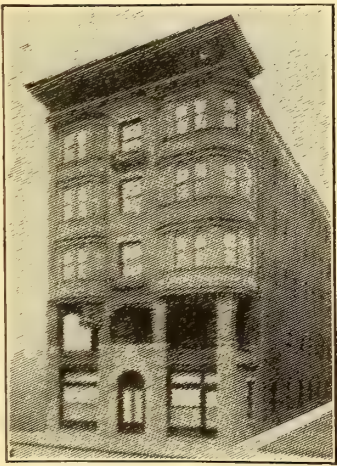
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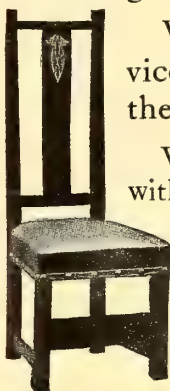
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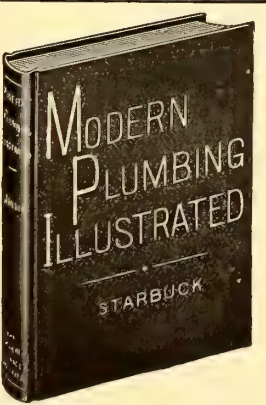
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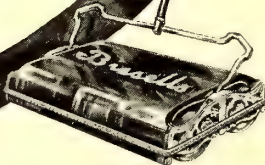
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THE strong public sentiment in opposition to the building of the new Court House in City Hall Park of this city, was well expressed at the recent meeting held before the Board of Estimate and Apportionment.

The Court House Committee that selected the site in City Hall Park presented a strong and determined fight for the carrying out of its plan, but the scheme has met with so universal an opposition that the Committee is beginning to show signs of weakening, a willingness to submit to the popular sentiment of the people, and a desire to observe the situation from a different and broader point of view.

The excellent work done by the New York Chapter of the American Institute of Architects, the City Club, the Bar Associations and other organizations, who have had the best interests of the city at heart, in their opposition to the use of park property for public buildings, should receive the hearty support and co-operation of all citizens in reclaiming and preserving that which belongs to a common people.

That the new Court House is to be built down town is now assured; the judiciary and the members of the Bar want it there, and that seems to be the general wish of the people—and, this being the case, there is absolutely no excuse for diverting property that belongs to the people for a common use, for such a purpose, especially from the view point that it is cheap. Judging from the opinion of the best authorities it is not cheap from a financial standpoint, and neither is it cheap from a patriotic standpoint as an object lesson to future generations.

The people of this city are thoroughly opposed to any such use being made of the parks, and are keenly alive to the danger of contracting the city's breathing spaces; and now that there is a possibility of reclaiming the land that was formerly theirs by the destruction of the old buildings when the newer ones are to be built, they are willing to seize the opportunity to restore, preserve and beautify it for the good of the community. We have had too much improvident building in this city, and the shortsightedness of our forefathers is blamed for that stupidity which permitted the Post Office to occupy the position it does, thereby precluding what possibility there was for creating the greatest civic center in what is destined to be the greatest metropolis in the world.

Let the work of our forefathers be an object lesson to us, so that we may look with a broader view into the future.

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WHY NOT PLANT TREES?

PARTICULARLY interesting is the editorial in one of the local papers of a nearby suburban town: "Why Not Plant Trees?" This is a very important and timely question, and is one that should be thoroughly agitated by the newspapers of the land, for the purpose of instilling into the minds of inhabitants the necessity and importance of tree-planting.

In this age, throughout the country, a great interest is being manifested in the beauty of surroundings, for the reason that the more cultivated tastes of the people demand it. Trees planted in the proper place are always attractive, and an artistic effect can be obtained by the use of them, and wherever one is planted the value of the land is enhanced upon which it is placed.

The seeker of a home site will select a place with attractive surroundings in preference to the place with unimproved surroundings, and people looking for an investment in real estate are not attracted by barren lots and unsightly conditions. Trees not only afford an abundance of comfort and pleasure, but they increase the value of real estate more than ten times the amount of money invested in any other way. This is well known, and it is not economy to ignore it. I recently asked a member of one of the wealthiest and most influential families in a nearby city and who was one of its largest owners of real estate, "How many trees had he set out on his property during the last forty years?" and I was informed that about ten trees had been planted, and these about his house, neglecting the fact that all the real estate which he owned away from his house lot was barren of trees both on the interior and along the border line of the property. This is the state of affairs that is met at every hand and the astonishing thing is, that it is not so much the small property owner who disregards this important element in making his surroundings more attractive, but it is apt to be the large real estate owner who is entirely indifferent to anything outside of the grounds surrounding his house.

Another reason of this lack of interest in tree planting is the need of patience in awaiting results, and the possibility of not living to enjoy the first beauty of the trees when they mature. This is not as it should be. The pleasures and advantages that others enjoy should be taken into consideration the same as the leaving of accumulations of any other character. Let your motto be: "Leave the world more beautiful than you found it."

The planting of trees need not be looked upon, however, as work done only for the benefit of the future generation, for there are many rapid-growing varieties of trees that give fairly immediate results, and even if five, ten or more years are required to secure the desired effects, the results are well worth the patience required.

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CANNING AND PRESERVING FRUIT

HINTS FOR THE HOUSEWIFE—I*

By Maria Parloa

UTENSILS NEEDED FOR CANNING AND PRESERVING.

In preserving, canning, and jelly making iron or tin utensils should never be used. The fruit acids attack these metals and so give a bad color and metallic taste to the products. The preserving kettles should be porcelain lined, enameled, or of a metal that will not form troublesome chemical combinations with fruit juices.

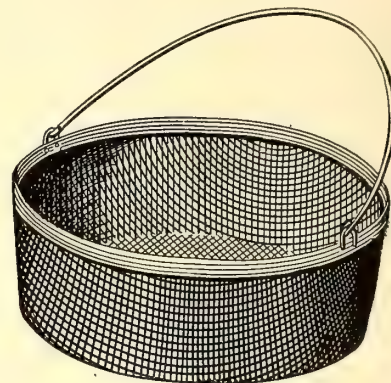


FIG. 1.—WIRE BASKET.

The kettles should be broad rather than deep, as the fruit should not be cooked in deep layers. Nearly all the necessary utensils may be found in some ware not subject to chemical action. A list of the most essential articles follows:

Two preserving kettles, 1 colander, 1 fine strainer, 1 skimmer, 1 ladle, 1 large-mouthed funnel, 1 wire frying basket, 1 wire sieve, 4 long-handled wooden spoons, 1 wooden masher, a few large pans, knives for paring fruit (plated if possible), flat-bottomed clothes boiler, wooden or willow rack to put in the bottom of the boiler, iron tripod or ring, squares of cheese cloth. In addition, it would be well to have a flannel straining bag, a frame on which to hang the bag, a syrup gage and a glass cylinder, a fruit pricker, and plenty of clean towels.

The regular kitchen pans will answer for holding and washing the fruit. Mixing bowls and stone crocks can be used for holding the fruit juice and pared fruit. When fruit is to be plunged into boiling water for a few minutes before paring, the ordinary stewpans may be employed for this purpose.

A scale is a desirable article in every kitchen, as weighing is much more accurate than the ordinary measuring. But, knowing that a large percentage of the house-

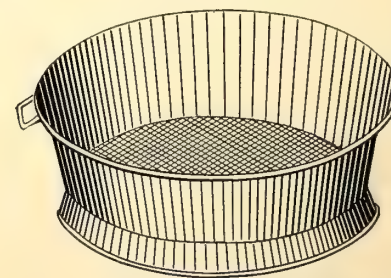


FIG. 2.—WIRE SIEVE.

keepers do not possess scales, it has seemed wise to give the rules in measures rather than weight.

If canning is done by the oven process, a large sheet of asbestos, for the bottom of the oven, will prevent the cracking of jars.

(Continued on page 12)

*Reprint of Farmers' Bulletin 203, issued by the Department of Agriculture.

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Garden Competition for 1910



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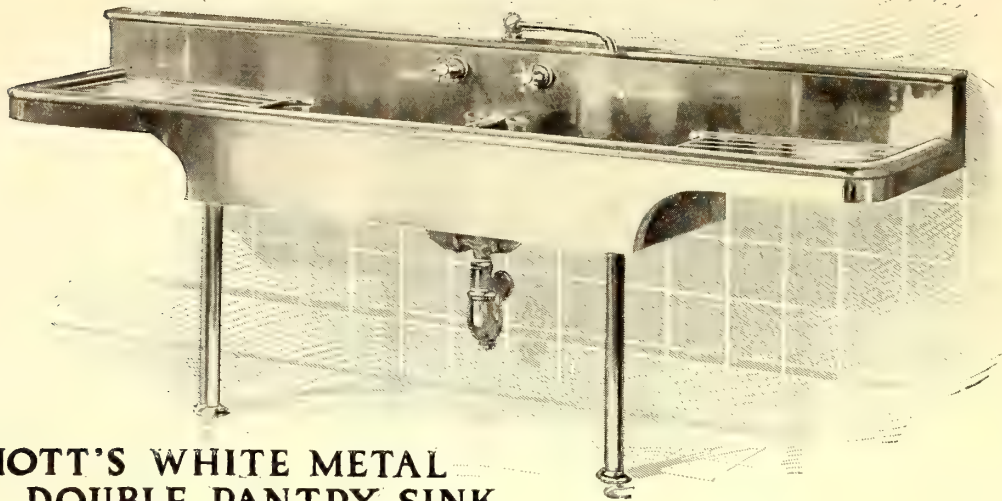
Conditions

Competitors for the prizes must comply with the following conditions :

- 1 A general description of the garden, consisting of not more than fifteen hundred words, giving the size of the plot and the kind of plants used in planting, must be submitted. Give any details which you think will be of interest.
- 2 Drawings of the plot are to be made in black and white, drawn to the scale of eight feet to an inch, showing the position of the various plants and shrubs. Name each variety of plant on the plan by a number, giving a separate list with a corresponding number by which each plant may be identified.
- 3 Photographs of the garden must be submitted. It will be of interest to send as many photographs of the garden, taken from as many points of view and at different times in the summer, as illustrate the changes in the garden's appearance to the dominance of certain flowers. The photographs must be printed on printing-out paper and are to be not less than five by seven inches in size. A photograph of the site of the garden before it was developed would add interest to the series.
- 4 Descriptions, drawings and photographs are to be marked with a pseudonym which is to be enclosed in a sealed envelope containing the name and address of the competitor. All descriptions, plans and photographs are to be sent free of any name or address on them except the pseudonym. Express or postage charges must be fully prepaid.
- 5 Just as soon as the judges have rendered a decision upon the four best gardens submitted for this competition, they will notify the Editor who will open the envelopes bearing the pseudonym and containing the competitor's true name, and will at once notify the successful competitors that they have won the prizes.
- 6 The Garden Competition Editor reserves the right to publish in American Homes and Gardens all prize gardens and those gardens which in the opinion of the judges are worthy of honorable mention. The names of those whose gardens are reproduced will be published with the photographs.
- 7 Contributions are to be submitted to the Garden Competition Editor, American Homes and Gardens, Munn & Co., Publishers, 361 Broadway, New York.
- 8 The garden competition closes September 15, 1910. Contestants need not to be subscribers to American Homes and Gardens, and no charge or consideration of any kind is required. No photographs, manuscript or plans will be returned.

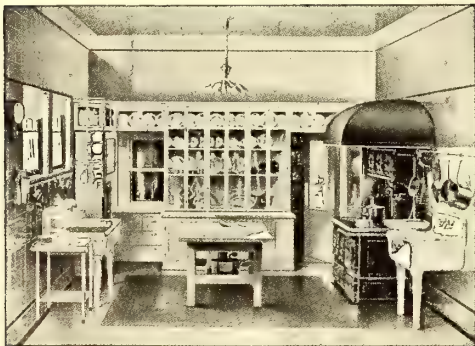
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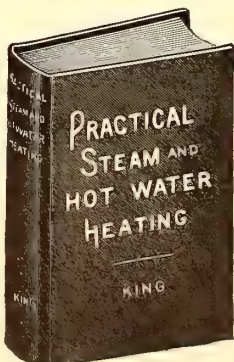
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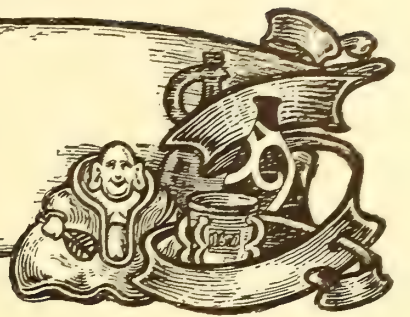
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American Homes and Gardens for June



A House at Hadlyne, Massachusetts

The splendid house of Frederick Culver, Esq., at Hadlyne, Mass., forms the opening subject of the June issue. The house and garden are the work of Charles A. Platt, the well-known architect, and they combine to furnish a delightful example of the ideal country home. The article is by Francis Durando Nichols and it gives a detailed description of the interior and is profusely illustrated with photographic views showing the exterior, the interior and the garden.

Decorations and Furnishings for the Home

Alice M. Kellogg presents her fourth paper, which will be devoted to fitments for the porch. The article will be illustrated by photographic views, showing appropriate designs for the upholstering of the porch furniture, including the cushions, etc. This is a subject of vital importance in creating a harmony in the furnishing of a porch.

Handicraftsman

The department of the handicraftsman, conducted by A. Russell Bond, will be devoted to the use of cement in the building of concrete flower urns for use in the garden. The article will have illustrations showing how the work can be done and also views showing the results of the work as completed. Another subject illustrated will show how it is possible for an amateur to build a concrete border for a garden walk.

A Stucco House

The residence of A. S. Cox, Esq., at Summit, New Jersey, is described in an interesting manner by Francois Picard. Houses of this style and kind of construction are always interesting to those who are familiar with the use of cement in the building of the exterior walls of a dwelling.

Honorable Mention Garden

The garden of Mrs. James B. Mellon, of New Florence, Pa., that received honorable mention in our recent prize garden competition, will be illustrated with plans and views and a descriptive article. The garden is a particularly interesting one, and Mrs. Mellon defines some of her methods in planting and developing the plot.

A Summer Home and Garden

A very interesting article is the one prepared by Mary H. Northend on the Summer Home and Garden of Charles H. Bond, Esq., of Swampscott, Mass. Its principal feature is the study of the garden in relation to the house; the latter being a secondary consideration to the landscape work which has been done about the estate.

The Lone Pine

The "Lone Pine" is a little bungalow built for the sum of \$450. Mabel Tuke Priestman tells in a short story how it was constructed of hollow tile; how it was subsequently added to; and how the cost was divided in the total amount of expenditure.

A House for a Guaranteed Cost

Messrs. Walker & Hazzard, present a design for a unique and attractive house designed in the mission style, which can be built in any suburb of New York city for \$6,000. This estimate has been given by a reputable builder upon the result of a careful study of the plans. The first floor contains a living-room, den, dining-room, kitchen and pantry; the second floor three bedrooms, a bathroom, and a servant's room.

Bernard Palissy, the Famous French Potter, and his Works

To all admirers of the antique, the works of Bernard Palissy, the famous French potter of the sixteenth century, are of peculiar interest. Charles A. Brassler has prepared a very interesting article on the subject, which is profusely illustrated.

Short Horns

This is a pleasing article by Theodore Langdon Van Norden who has made a special study of the breeding of short-horned cattle. He states that for years there have been only two kinds of breeds of cattle, the dairy breeds and the beef breeds. He also states that it has been claimed that no cow exists that satisfactorily combines the qualities of the two classes. He demonstrates that the short-horned cow does not give as much milk as the Holstein or milk so rich as a Jersey, and that she gives much richer milk than a Holstein and more milk than a Jersey. This is a particularly important subject to all farmers, who are interested in breeding cattle, or maintaining a dairy.

Bulb Growing On Sponges

In recent years the culture of bulbs for use in house decoration has become such an important feature that any new system is sure of receiving attention from all indoor gardeners. S. Leonard Bastin tells in a very pleasing way, in an illustrated article, how this may be done.

A Group of Small Houses

The small house which is the most widely constructed type of building in this country, is always of interest to the home-builder. Paul Thurston presents an article on this subject, with engravings showing the exteriors of the houses, and also the floor plans of the interior arrangement of the various rooms.

A Complete Summer Home For \$2,000,

An interesting paper by Esther Singleton tells how it is possible to have a summer home for about \$2,000, furnished with the equipment equal to the estate of a man of means. It will deal with the purchasing of a portable house and the furnishing of it, a garage, an automobile and a motor boat, and also how to go to the country and rent a piece of land on the seashore for a small sum of money.

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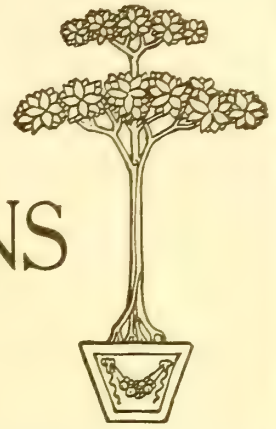
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CONTENTS FOR MAY, 1910

	PAGE
THE ENTRANCE TO THE HOME OF TIMOTHY WALSH, Esq., Pasadena, Cal.	Cover
A PROFUSION OF FLOWERING SHRUBS ADORN THE TERRACE	Frontispiece
MODERN HOUSES FROM THE ATLANTIC TO THE PACIFIC.....	By Francis Durando Nichols 163
IDEAS FOR COLONIAL FURNISHING.....	By Mary Livingston 171
THE HANDICRAFTSMAN—Home-built Garden Seats and Pergolas.....	By B. A. Vanderveer 174
AMERICAN HOMES AND GARDENS' GARDEN COMPETITION—The Fifth Prize Garden, won by Edward Payson, Esq., of Lexington, Mass.....	176
AUTOMOBILING—The Modern Low-priced Car.....	By Roger B. Whitman 178
THE ALTERATION OF THE COLORS OF FLOWERS BY CULTIVATION..	By Prof. F. Hildebrand 180
THE OUT-OF-DOOR LIVING-ROOM.....	By John A. Gade 181
SOME CALIFORNIA BUNGALOWS.....	By Helen Lukens Gaut 185
POTTERY MAKING FOR THE AMATEUR.....	By Mabel Tuke Priestman 189
THE SMALL KITCHEN OF TO-DAY; ITS PLANNING AND EQUIPMENT..	By Robert Spencer, Jr. 193
THE DEVELOPMENT OF THE ARTS AND CRAFTS HOUSE.....	By Edith Haviland 196
DECORATIONS AND FURNISHINGS FOR THE HOME—III. The Combination of Wall Papers and Window Curtains	By Alice M. Kellogg 198
THE USE OF CEMENT IN THE BUILDING OF THE SUBURBAN HOUSE AND GARAGE By Robert W. Gardner	201
GARDEN NOTES—Lawn Making	By Charles Downing Lay 207
PLANNING THE SMALL GARDEN.....	By Loring Underwood 208
A WANDERER'S GARDEN.....	By Gladys Hyatt Sinclair 211
TREES AND SHRUBS TO AVOID IN GENERAL PLANTING.....	By Irving E. Johnson 212

New Books

Canning and Preserving Fruit; Hints for the Housewife	
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A profusion of flowering shrubs adorn the terrace in front of the house

AMERICAN HOMES AND GARDENS



Volume VII

May, 1910

Number 5

Modern Houses from the Atlantic to the Pacific

By Francis Durando Nichols



THE twentieth century idea of building a house artistically has developed most effectively across the entire country, from the Atlantic to the Pacific Coast. One who is accustomed to the style of small house that is to be found in the East, will be astonished, as he travels over the continent, to find a type that from an architectural point of view is

equally as good as any to be found in the eastern section. And still greater the astonishment, when in the West, he learns the economic fact that there the small house is far superior in its interior arrangement, particularly the service part, which has received a deal of consideration in order to overcome as far as possible the difficulties of the domestic problem now seriously confronting most house-keepers.



Fig. 2—The garden terrace and pergola

To build a small house on a small plot is a different question, and one that has not altogether been solved in this country, though there is absolutely no reason why it should not be. The paramount thought of the average house-builder of small houses on small lots is to construct a house that will be so many feet wide and so many feet deep, and to contain so many rooms, without any thought as to its exposure or setting.

The development of the grounds about the house usually consists in grading and sowing them with grass seed.

The Westerner has caught the spirit of this expression, and has developed it in a more forceful manner than is to be found in many of the suburban towns of the important cities of the East. I am not speaking of the great estates in the East, which are laid out under the direction of skilled landscape architects, for the beauty of such as these is in many respects beyond question; but I am referring only to the class of houses that is illustrated in this article—the class that is built on a suburban lot.

Take, for example, the house illustrated in Figs. 1, 2,

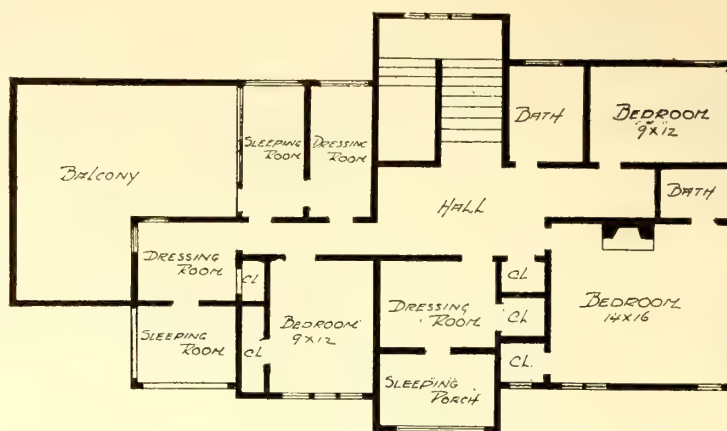


Fig. 3—Second floor plan



Fig. 4—The exterior of the house is built of stucco and redwood shakes

This is not as it should be, for if a man will observe what a dweller of moderate means does in England, he will find that no matter what the size of his grounds may be, even if he is possessed of only a garden space of twenty feet square, it is thoroughly cultivated and planted with growing shrubs and flowers. This is one of the reasons why England resembles a great park, for the desire of beautification is instilled into the hearts of its subjects, no matter how humble.

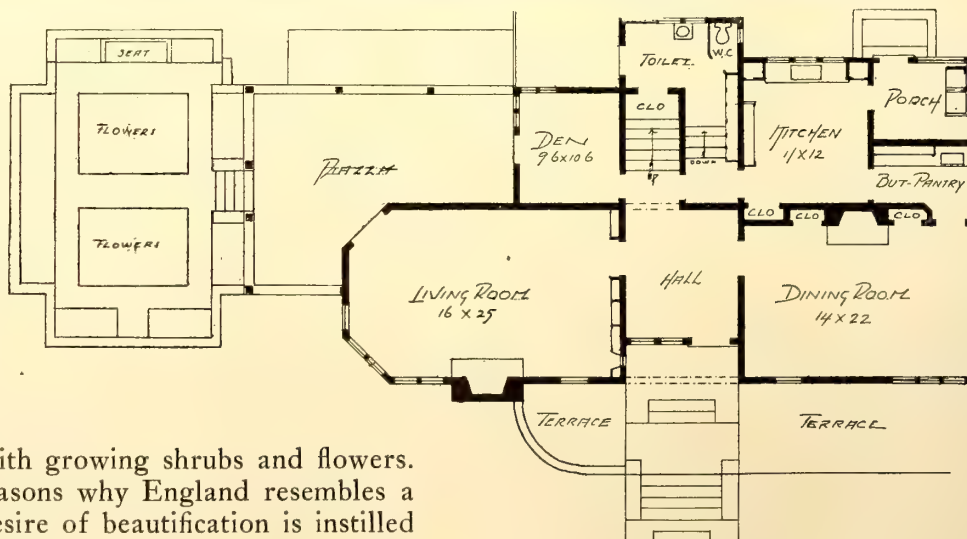


Fig. 5—First floor plan

3, 4, 5, 6 and 7, which was built for Timothy Walsh, Esq., at Pasadena, Cal. It is one of excellent design and fine proportions and sufficient detail, but what would it look like if it were not for the excellent planting which has been done about it, for flowers are growing everywhere, and are clinging to it in an artistic profusion.



Fig. 6—The staircase hall

The terraced wall adds its beauty, as well as does the garden, with its riotous bloom and color.

An unusual feature of the house is the main entrance, which is placed at the side instead of the front, and is approached by a beautiful flower-bordered terrace. This terrace (Fig. 1) has a low wall of water-worn cobblestones of irregular sizes, topped with red brick. The floor is cemented, and set in the center with square red tiles. The combination of red brick, red tile, gray cement and cobblestones is most pleasing. The lower half of the house is of pebbledash gray plaster, which extends direct from the grade line, with no foundation showing. The upper part of the house is of rough redwood shakes, which have been given a coat of oil, leaving them with the appearance of being weathered. The eaves have a four-foot extension. The frames of the lattice windows are painted white inside and out, while the exterior casings are of weathered redwood. The entrance hall is square in form, with openings direct to the dining- and living-room, and also to the stair hall, from which the stairs to the second story ascend. On either side of the stairway in the hall (Fig. 6), the native wood has been used for paneling, while the balance of the hall walls have been stripped with wood, panel fashion, over the rough plaster. This extends to the picture mold, which in size and shape duplicates the strips. Each corner is finished with redwood strips, making the panel effect uniform. The interior doors are paneled in an original Craftsman design. The hardware throughout is of dull black iron. The best thing that can be said of

the living-room (Fig. 7) is that it is livable. The west end of the room, which looks out upon the terrace (Fig. 2), is entirely enclosed with swinging latticed windows, while there is a wide French door which opens on to the outdoor living-room. At the opposite end of this room there are book-shelves built in, and a French glass door that opens into the hall.

The book-shelves are without doors, are uncurtained, and extend from the floor to the ceiling. A bookcase of this sort is more useful than one with doors. The mantel is of eight-inch by eight-inch red tiles, framed in redwood. The walls and ceiling in this room, as well as in the hall and the dining-room, are of rough

plaster, which is oiled and tinted in old-gold. The woodwork is of redwood in its natural state, having been neither oiled nor stained, and the effect of this treatment with the old-gold walls is in excellent harmony. The dining-room fireplace is of red burned brick, framed with weathered redwood. On either side are cupboards built in a simple manner, and of an attractive design. There is no plate rail in this room, excepting on the side above the mantel and cupboards. The floors throughout are of oak.

The second story contains four bedrooms, two bathrooms, three dressing-rooms and three out-of-door sleeping-rooms. The last set of rooms is one of the principal characteristics of this house, and they are arranged in such an unobtrusive manner that they become an artistic feature to the building, rather than one of disfigurement. The out-of-door sleeping-room is becoming an important adjunct of the suburban house, and no more expedient ar-



Fig. 7—The living-room



Fig. 8—The front of the house, showing the entrance porch



Fig. 9—The rear of the house showing the living-porch

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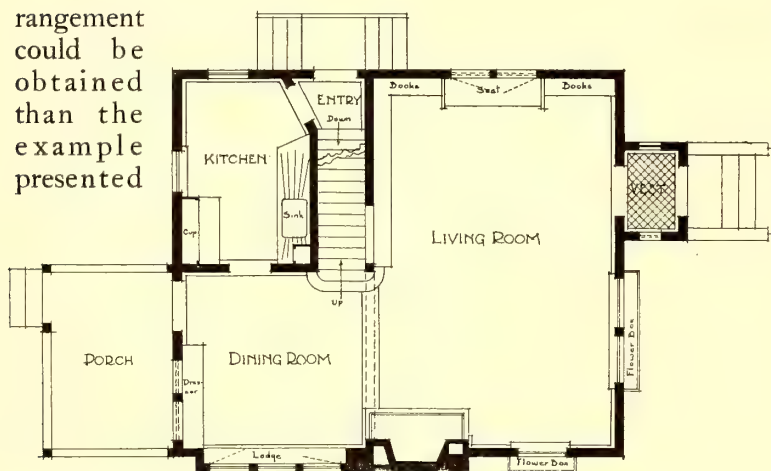


Fig. 10—First floor plan

herewith, for each of the rooms of this type has a direct communication with a dressing-room. The bathrooms have tiled wainscotings and floors, and exposed nickel-plated plumbing. Mr. Walsh was the architect of his own house.

The second house, illustrated in Figs. 8, 9, 10, 11, 12 and 13, was built for Miss Rhoda B. Long, at Minneapolis, Minnesota.

This house is an evidence of the desire of the home-builder of modest means to have one that will be in harmony with the progressive movement toward cement construction, and a simple interior arrangement of rooms.

This is a dwelling built on small grounds, and the noticeable features are the plants and shrubs and flower-boxes which are added to soften the severity of the stucco walls. Even this does not provide the effect desired, for it needs more large shrubs and trees planted about it; but the en-

deavor to do something is manifest in the shrubs that have been started about the front door.

This is a dwelling, however, containing all the characteristics and conveniences of the larger house, but with the elimination of the usual staircase hall, and building the stairs so that they can be reached direct from the living- or dining-room is a well-considered feature. By this arrange-

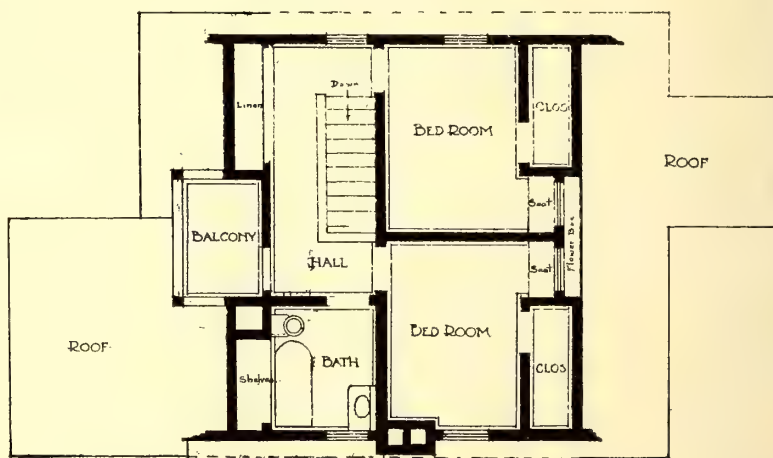


Fig. 11—Second floor plan



Fig. 12—The living-room and staircase

ment the space usually utilized for a hall is thrown into making one large room, which would have been impossible under the previous planning of small houses.

Miss Long's house is a very excellent example of the building of a small house costing \$2,000.

The exterior walls are covered with cement stucco, while the trimmings are painted brown. The roof is covered with shingles and

stained a moss-green, blending well with the soft gray tone of the stucco walls. The entrance porch opens direct into the living-room (Fig. 12), which extends across the entire front of the house. It is trimmed with cypress finished in a soft brown color. At one end of the room there are bookcases, between which is built a window seat, with windows over the seat. Opposite is the fireplace, constructed of red brick and finished with a mantel. The dining-room, opening from the living-room, is finished in a similar manner. A feature of the plan is the living porch, which opens direct from the dining-room; it is enclosed with screens, and used for dining purposes. The kitchen is conveniently placed, and is fitted up complete.

The second floor contains two bedrooms, a sleeping balcony and a bathroom, furnished with nickel-plated plumbing.

Mr. A. R. Van Dyck, of Minneapolis, Minn., was the architect of this house.

The third house, presented in Figs. 14, 15, 16, 17 and 18, is one that was built for Mrs. Clara B. Woolens, at Wilmette, Ill. This house has a fine setting of forest trees, and some planting about it, but it requires a careful treatment of low growing shrubs to give it its proper surroundings. The main building is constructed of gray cement stucco for its walls, brown painted trim, white painted sash, and a moss-green stained shingle roof. The entrance porch (Fig. 14) has flower-boxes on top of the pedestals,



Fig. 13—The opening on the staircase between the living-room

at each side of the steps. The hall is trimmed in oak, finished in a golden-brown tone, blending well with the walls, which are tinted a mustard yellow. The living-room, to the left of the entrance, is trimmed with birch and finished in mahogany. The walls are tinted green. This living-room contains an open fireplace, furnished with tiled facings and hearth, and a wooden mantel. The living porch (Fig. 16), which is built at the rear of the living-room, has direct connection with

the kitchen by the way of the rear porch, so that it may be possible to use the porch for dining.

The dining-room is trimmed with oak, and has a plate rack extending around the walls at the height of seven feet. The butler's pantry and kitchen are conveniently arranged. There are four bedrooms and bathroom on the second floor; the last is furnished with porcelain fixtures and exposed nickel-plated plumbing. The bedrooms are treated with white enamel paint. The third floor contains a servant's bedroom and trunkroom, while the cellar contains the laundry, heating apparatus and fuel-room. The cost of this house was \$4,600. Messrs. Rogers and Woodyatt, of Chicago, were the architects.

The house of Mr. George Barber, at Englewood, New Jersey, the fourth of the series, and which is presented in Figs. 19, 20, 21, 22, 23, 24 and 25, is one of the best examples of the modern house to be found along the Atlantic Coast. It is the work of Mr. Aymar Embury, architect, of New York. Mr. Embury has accepted the Dutch



Fig. 14—The entrance porch



Fig. 15—An interesting house of stucco



Fig. 16—Another view of Fig. 15, showing the living-porch at the rear of the house

Colonial as his prototype, bringing it up along the lines of the progressive movement in order that it may meet all modern requirements. The first story of the house (Fig. 19) is constructed of cement stucco, while the second and third stories are covered with shingles painted white. The roof is also covered with shingles, and stained a deep red-dish-brown tone. A feature of the house is the wooden shutters hung at the windows. The entrance is direct into the hall, from which an ornamental staircase ascends to the second story. The walls are paneled, and the whole is finished in Flemish brown. The walls of the living-room (Fig. 22) are covered with a Japanese grass cloth, while the panels in the ceiling, formed by the beams, are covered with a similar grass cloth in golden brown. The woodwork is finished in a Flemish brown. The fireplace is built of red brick laid in red mortar, with its facings extending to the mantel shelf.

The dining-room (Fig. 25), opening both from the hall and the living-room, is treated with white enamel. It has a paneled wainscoting finished with a plate rack, above which the wall space is covered with a green figured design on a white background. A door opens from the din-

ing-room into the butler's pantry, which is fitted up complete with dresser and sink. Another door opens direct into the kitchen, which is provided with all the very best modern appointments. There are four bedrooms on the second floor, all treated with white enamel paint; there are also two bathrooms, which are wainscoted with tile, and furnished with porcelain fixtures with exposed nickel-plated plumbing. The attic contains the servant's room and bath, and trunkroom. The laundry, heating apparatus and fuel-room are placed in the cellar. This house has a fine setting furnished by nature, which has been greatly aided by judicious planting, and showing the good results of the desire to increase the beauty of one's surroundings.

As a whole, the class of houses illustrated herewith is not only representative of the best dwellings that

are being built throughout the country, but it is the expression of the very best thought given to the small house of to-day. It shows that the desire of the laymen is to secure a house, even of small dimension, which will express an individuality that will be distinct from its neighbor, and besides indicates the increasing desire of the architect to put a personal distinction into the designing and the plan-

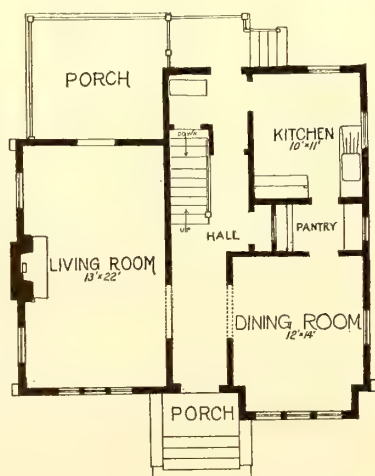


Fig. 17—First floor plan

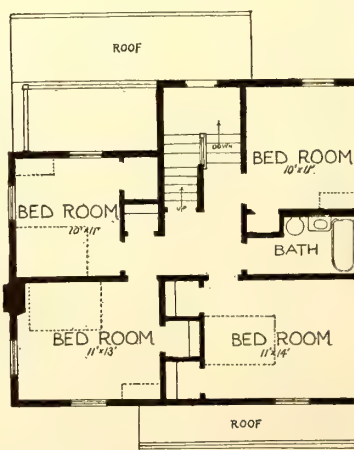


Fig. 18—Second floor plan



Fig. 19—A house at Englewood, New Jersey, built in the Dutch-Colonial style of architecture



Fig. 20—The end of the house, showing the living-porch



Fig. 21—The living-porch with roof with pergola effect

ning of the small house, the same as he does with a house of more extensive proportions.

It is really a greater art to design a small than a large one, for the reason that it requires a deeper study of those primal conditions that usually surround the building of a house of moderate cost. This is the main difficulty which confronts both the layman of small means, and the architect who is to carry out the desires of his client in giving him all that he possibly can for the amount he may wish to spend.

The house illustrated in Figs. 8, 9 and 10 is, perhaps, the best example for use in showing the maximum of space, comfort and appointments, at the least expenditure of money. The price is certainly small for a house of this character.

The house designed by Messrs. Rogers and Woodyat is, perhaps, one of the most economic and best-arranged of the present series. The design is well executed in cement stucco, and combines many attractive features of this kind of combination.

The plans show an unusual amount of clever spacing in a very small area. The rooms are neither too small nor too large; neither out of proportion nor out of keeping with the house. There is ample space for the placing of the furniture with proper effect.

The house designed by Mr. Embury presents all the artistic skill needed for the development of a structure of this unusual dignity, of one containing all



Fig. 22—The living-room

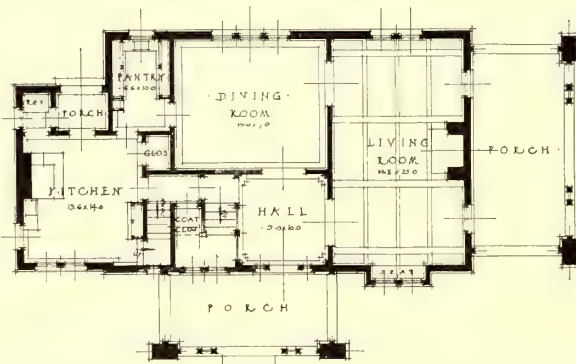


Fig. 23—First floor plan

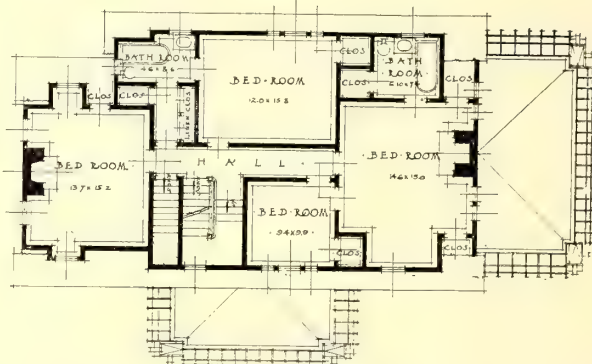


Fig. 24—Second floor plan

been done about the respective houses is an indication of this tendency and an evidence of the intention of bettering the conditions of the house grounds now apparent over the entire country, particularly in the West. The color scheme of

the house and the style of architecture in which it is designed are not important factors in regard to the planting of the proper trees, for the green foliage of a

tree will always take care of itself; but it is an important matter to consider when flowering plants and shrubs are to be planted and grown about the house, for the color of the

flowers should blend with the color of the dwelling. It matters not how perfect may be the style and construction of a house, as the final and flawless effect sought for will not be consummated until the home has a proper setting, and the only way to secure this is to plant trees, shrubs and vines on the site upon which the house is to be built.

By this method only can a harmonious and an artistic result be obtained.



Fig. 25—The dining-room

Ideas for Colonial Furnishing



An old stairway



By

Mary Livingston



VERY revival, either in art or religion, is characterized by enthusiasm. Especially is this true of the great periods of architecture, when, after a lapse of interest, they again come into their own.

With the popular return to house building of the Colonial era, there has also been an accompanying desire to follow the interior fittings of the homes of the eighteenth century. The open fireplace has been restored in all its old-time integrity, although it is not made the sole dependence for winter heating. Candlesticks as holders for artificial illumination are once more in evidence, electric wiring supplying the place of the primitive tallow dips. The prestige of the blue-and-white table china is restored. The four-poster bed and crochet spread are the choice for the guest room, and cotton rugs for the floor are being woven on hand looms.

Recognizing that some modification of the furnishings of a past date is requisite to meet modern standards of comfort and taste, we can still find, among the old-time ideas, many that are suitable and attractive enough to perpetuate in our progressive century.

A piece of old furniture sometimes gives the key-note not only for the room in which it is placed, but also for the entire house. A fine old sideboard,

for instance, is acquired. A dining table of equal merit is naturally added as a companion, and chairs to match ensue. The furniture in adjoining rooms, it soon becomes evident, needs harmonizing with its neighbors, and almost without premeditation the house throughout takes on an old-time atmosphere.

Or, as another example, the purchase is made of a country home whose lines are suggestively old-fashioned, and the interior equipment is at once started with the decorations that were in vogue five or six generations ago.

Colonial furnishing responds to the simple problems of a home that must be developed with a moderate income as well as the more elaborate demands of an expensive establishment. In the latter, the cabinet work may follow the exquisite detail of the residences of the Colonial governors, or the dignified mansions of the early Virginians of wealth, and the furniture may be drawn from the carved work of the Empire school, the more ornate of Chippendale's patterns, and the inlaid and painted decorations of the Adam brothers.

In less pretentious surroundings one may install a fireplace of factory make that bears the stamp of Colonial simplicity. Wood paneling sometimes fills the space above the mantel, as in the illustration, or, a triplicate mirror framed in gold rests on the mantel shelf.

Blue - and - white



A fireplace with paneled over-mantel is in harmony with the drawing-room

fireplace tiles were brought from Holland for the better grade of house building in Colonial days and an almost perfect set representing Biblical subjects, is still in evidence, in the historic mansion, near Philadelphia that was once the home of William Penn's secretary. Terra-cotta or buff-colored bricks may be substituted for tiling with sometimes a better general color effect than the blue tiles.

The fireplace equipment calls for andirons, fenders, tongs, poker, shovel, hearth brush and bellows, and of these it is not difficult to obtain duplicates of really old patterns.

The decorations for the shelf itself may consist of brass candlesticks, one at either end, with a Chinese vase in the center, breaking up the middle spaces with a bowl of fresh flowers and framed pictures. In selecting pictures for the



Bricks are used for fireplace tiling in the library

walls the mezzotints of Charles Bird may be remembered and also the etchings from Dendy Sadler's picturesque interiors.

Lighting fixtures, especially when electricity is employed, may give expression to Colonial feeling by using bracket lamps and cut-glass shades, or candlesticks with a detachable silk screen in front of the flame. Omitting a chandelier, one may have side lights for general illumination, with portable lamps on tables and writing desk. A cluster of ceiling lights in the dining-room may be

supplemented with candles at meal times.

Carpets are almost universally abandoned for large and small rugs, in these days of hygienic conditions. For the sleeping-rooms there are varied and interesting weavings based on the hand-loom of Puritan days. Some of the artistic colorings in vegetable dyes are more effective than



Side chairs of Windsor design are desirable for a dining-room



An old four-post bedstead

the hit-and-miss pattern, but the latter often suits the passageways and hallways of an upper floor.

Wall papers were a luxury in the days when they were brought by sailing ships from France and England, and so carefully cherished through successive generations that they have been in some few instances kept intact to the present time. Sometimes an original paper that especially suited its location has been reproduced in design and coloring.

Hall papers in landscape effects, gray and white, with some slight accent of color, are attractive with white-painted woodwork and mahogany stair rail, and from this neutral avenue one may introduce buffs and yellows in the rooms with north and east exposures, and blues and greens in the sunny outlooks.

Two treatments are open for the walls of the sleeping-rooms—to make a background of agreeable color with a striped, chambray or dimity paper, adding chintz at the windows and for furniture covering, or, to adopt a flowered wall paper with muslin curtains and white bed spread.

Perhaps the quaintest charm in Colonial furnishing is centered in the bedroom, with its four-poster bed, with or without a canopy top, its tall chest of drawers, its wing chair, sewing table and candle stand.

Fortunately there are reproductions of these pieces of furniture in cheap as well as expensive woods, prepared for stain or for paint. Strict adherence to the Colonial tradition need not, however, bar out such modern comforts as a lounge and rocker, hair mattress and box springs.

In the living-room, also, one may well supplement the older, more austere furniture with a Morris chair and Davenport sofa. The English gate-leg table is a capable one for the library lamp, books and magazines. The card table with folding leaf and serpentine front exacts so small a wall space that it recommends itself for the hallway. A low-boy that originated for bedroom use may be transferred to the dining-room for a serving table. In the illustration the side chairs of Windsor type have been cleverly adapted for the dining-room by the addition of loose cushions. The Windsor

arm chairs are favorites in almost any part of the house—hall, living-room, den or piazza, and some miniature copies for children's use are quite authentic in their lines. The rocking chair of our forefather's time hardly meets the standard of twentieth century comfort, and our late improvements may well be accepted for the informal sitting-room.

On the curtaining of the windows the home-maker may lavish considerable thought, as there is abundant provision for materials of all grades in quality and price, and tasteful expression is of more advantage than a rigid following of the more restricted resources of the past.

In homes where a moderate income must cover the furnishings, a white muslin curtain may be adopted for the second story rooms, with net or lace for the living-rooms. If the yard goods are made up in the house, they may be embellished by the addition of insertion or edging.

Shirred on small brass rods that are screwed into side brackets without balls or ends, and caught back at the sides of the casement with white cotton loops, this simple window curtaining is practical and attractive.

If an over-curtain may be added, the interior will look more finished and comfortable, particularly in the colder months of the year. Usually a curtain of thick material is lined and hung to the floor, but this rule, as in everything pertaining to a sensible furnishing of the home, may be adjusted to fit the situation.

Curtain material for the living-room may be sought among wool damask, taffeta, velvet, repp or the many novelties that are each season produced by our own manufacturers and those in foreign countries. In the library and dining-rooms, if the wall covering is unfigured, some of the needlework tapestries would make an interesting selection. In the drawing-room the silks, brocades, damasks and shadow taffetas form a fascinating array, if expense need not be considered. For the bedroom there are cotton materials printed on the machine that are almost as lovely as a water color painting, and charming, quaint designs of birds and flowers printed from blocks by hand.



A chintz paper for the bedroom



Conducted by A. Russell Bond

Home-Built Garden Seats and Pergolas

By B. A. Vanderveer



WITH summer rapidly approaching, it is high time for the handicraftsman to forget for a while his furniture designs and plans for indoor decoration, and bend his efforts towards beautifying his outdoor surroundings. It is surprising how little it takes to convert a commonplace grass plot into a really attractive lawn.

Suppose we start with a lawn or garden seat. The design should be simple and yet quite substantial, because light furniture is not adapted to outdoor use. The working plans here published suggest a seat that is similar to, but not identical with, the seat shown in the photograph. For the sake of simplicity in construction, we have shown a straight-backed bench, but it would be in perfect keeping with the general design to incline the back, provided the seat posts are kept vertical; nor would this change be found very difficult.

Before starting to build the bench, it should be noted that the seat is quite low; possibly too low to suit the fancy of some people. It would do no harm to add an inch or two to the height of the seat, in which case some may prefer to make the seat twenty, or even twenty-two inches broad, instead of eighteen, as shown. If the seat is to be made higher, and more than four feet long, it really should be comfortably broad. However, the design we illustrate will produce a very quaint, little, narrow-seated, high-backed garden seat.

The parts may be mortised and tenoned together, but this is not at all necessary. It is far easier to pin them together with dowels, which will be entirely concealed when the seat is painted. The slats of the back and sides may to advantage be nailed directly

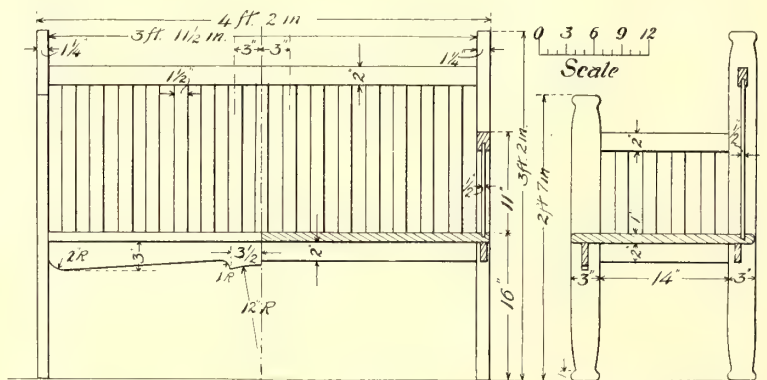
to the edge of the seat board, after which the ends may be covered by finishing strips, notched out to fit over them. The top rails need only be grooved to receive the upper ends of the slats, which should be nailed in place from the back. In cutting out the posts, care should be taken to use precisely the same kind of curve for one side as for the other. A good plan is to cut out a cardboard template. After using the template to draw one side, it is inverted to form a guide to draw the other side. After one post is cut out, it will serve as a template for all the others.

The bench should be painted white, and may be placed in a convenient nook of the garden, or under the favorite shade-tree.

The old-fashioned grape arbor or trellis, if reconstructed along the lines of an Italian pergola, will probably do more than anything else to alter the general tone of one's garden or lawn, and to bring it out of the commonplace. Although in Italy pergolas are used for supporting grape vines, they are not limited to this use here.

There is nothing very difficult about the construction of a pergola. To be sure, it can be made quite elaborate, but, as a rule, the simpler the design, the more beautiful it is. Two of the accompanying illustrations show a home-built pergola. The builder may be seen at the entrance. Vieing with this pergola in simplicity of design is the structure shown in the other photograph, which graces the gardens of a large estate.

A few dimensions of each design are given, to assist the amateur in planning his own pergola. In the home-built pergola that we illustrate, six by six-inch posts are used. They should be buried in the ground to a depth of at least two feet, with stone rammed in about them, so as to provide a



Working plans for a small garden seat



A garden seat under the favorite shade tree

solid foundation. A convenient height for the posts of a pergola is eight feet. The posts should be set in two rows, seven feet apart, on centers. A simple capitol is made by nailing a one-inch board to each face, with a cap board at the top, and a bit of molding under the cap and at the base of the capitol. The beams, which are supported on the caps, should overhang three feet at each end of the pergola. The overhanging ends may be patterned somewhat as shown in the drawings.

As the beams are set on edge, they cannot very readily be nailed in place.

A convenient way of fastening them is to use iron dowel pins. Procure from a plumber the requisite number of pieces of half-inch iron pipe, six inches long; then drill in the top of each post a hole not more than three and one-half inches deep and just large enough to receive the pipe. An expansion bit had better be used, because a half-inch pipe has an odd-sized outside diameter. When all the pipes have been seated in the posts, set one of the beams in place on them, and then, on striking the beam with a hammer, they will indent the under side and show where the holes must be drilled in the beam to receive them. In a similar way the two by four-inch rafters may be secured to the beams, though in this case shorter pipes would be preferable. The rafters should be twenty feet long, so that



A broad, low pergola of simple design

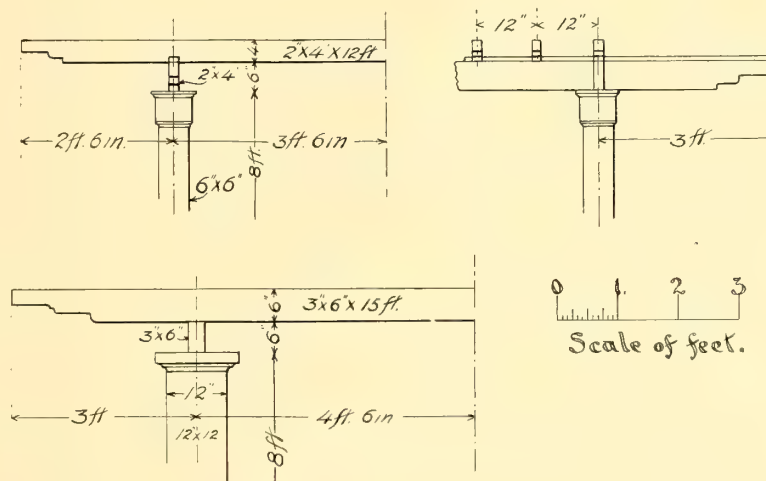
they will overhang each side of the pergola two and one-half feet, and they should be set twelve inches apart on centers. A low seat may be built along each side of the pergola, as shown in the photographs.

In the other pergola here illustrated, six by six-inch posts are used to support the beams, but they are concealed by the twelve by twelve-inch box posts built around them. The posts are finished off at the top with a plain cap fourteen inches square, and a bit of molding. The beams and rafters are three by six-inch timbers, and may be fastened in the

method described above. In this pergola the posts are set in rows nine feet apart on centers, and the beams and rafters have an overhang of three feet, so that the rafters should have a total length of fifteen feet. Quite commonly round posts and columns are used for pergolas, but these cannot be made by an amateur, and cost far more than the square posts, which can be bought from the mill planed to the desired dimensions.

Sometimes a lattice is laid on the rafters, to support the vines, but a cheaper way is to stretch wires across the rafters for the vines to cling to.

A very attractive pergola can be made, and at no very great expense, by using rough concrete columns. The columns can be cast in place, and should be reinforced with expanded metal or the like.



Principal dimensions of the pergolas here pictured



A home-built pergola at the end of the lawn



A nearer view, showing constructional details



American Homes and Gardens' Garden Competition

The Fifth Prize Garden

Won by Edward Payson, Esq., of Lexington, Massachusetts



THE garden was built at the southerly side of the house, and on a comparatively level piece of land which was used for a hay-field, but which for the past three years had served as a nursery to raise the shrubs needed in improving the appearance of the place. In the fall a part of this land was ploughed, leveled and made ready to plant. The portion intended for the garden was approximately one hundred feet long and fifty feet wide, but was afterwards extended to allow for the making of some rose beds. The ground between the garden and the street had to be left until the following spring, when it was spaded and seeded.

The short pergola shown on the plan forms the connecting link between the flower and kitchen gardens. It also gives an opportunity to grow vines where they will not be disturbed, as is often the case when they are allowed to climb on trellises near the house. Its entrance way is planted with crimson ramblers in an artistic profusion, and, while they only endure a short space of time with their brilliant coloring, they are attractive while their beauty lasts.

The hedge at the rear of the garden and on the end farthest from the house is California privet, while that on the front and end towards the house is Japanese barberry. The privet plants grew from cuttings obtained from shrubs planted near the old house, while the barberry was raised from seed planted about three years ago.

Almost all the perennials used were taken from a garden which was located on a knoll near the old house. The garden was planted several years ago, but never did well, owing to the dryness of the ground. In the fall, when moving day, or rather moving week came, we found that by separating the large clumps of perennials we were able to plant almost all of the new garden.

At regular intervals along the sides of the central path of the garden are planted specimens of silver-tipped Japanese juniper. As these grow into cone-shaped evergreens they will relieve the flat appearance of the whole garden, as well as make an attractive showing during the winter.

The edges of the beds were outlined with strips of sod cut in the cow pasture. As soon as the planting was completed, the paths were spaded and seeded.

In the fall, after planting, a light layer of leaves was spread over the beds. The following spring the plants came up very well, and showed very little loss. The Oriental poppies, mullin, pinks and cardinal flowers were the only varieties which seemed to suffer from the effects of the winter. In the few small spaces which were thus left have been planted the seeds of annuals, such as zinnias and poppies.

The remainder of the pergola is covered with grape vines, forming a pleasing setting to the crimson rambler.

The boundary line of the garden on the north side is planted with evergreen trees and other shrubbery, forming a wall from the adjoining property and also a protection from the north winds.

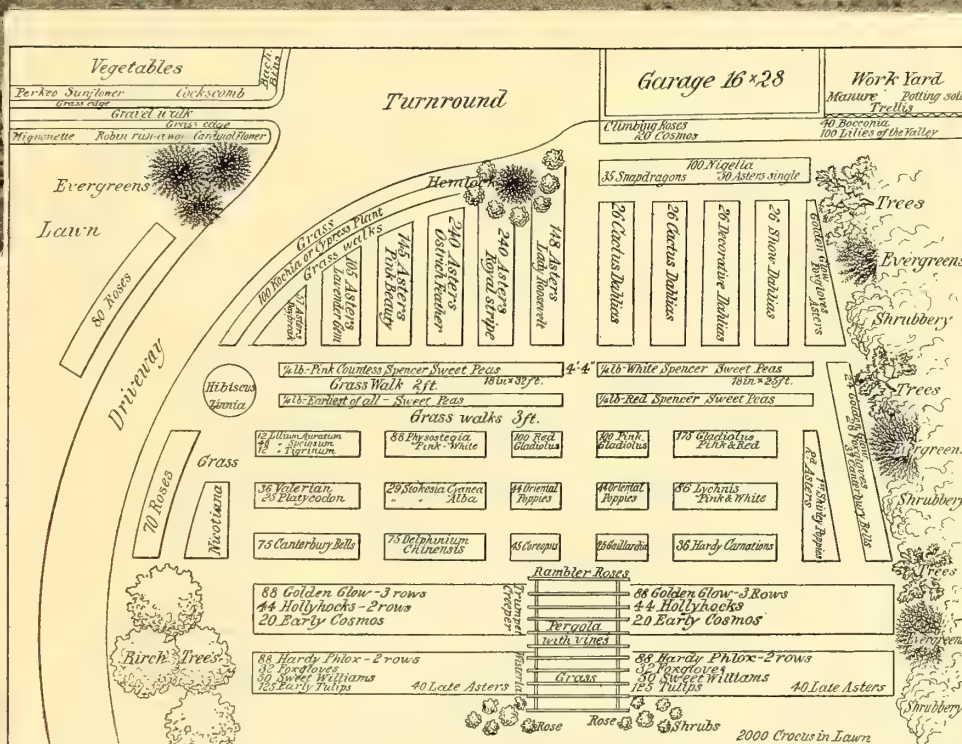
Thus far we have been very much pleased with our new garden, which is but a year old. As one of the great pleasures of having a garden is the privilege to add thereto any new or rare hardy plant which one may find, we are looking forward to a continual enjoyment of our work in the years to come.

A water pipe was laid from the cellar of the house to the center of the garden. On the end of this pipe is a garden shut-off sunken into the ground and protected by an iron cover.

By the use of the arrangement there is no need for a great length of hose and the source of water supply is completely hidden and out of the way.

On the side of the garden toward the street and outside of the barberry hedge is an irregular border composed of *sambucus nigra aurea*, or golden elder, and *hydrangea paniculato grandiflora*, with tall growing perennial phlox growing along the edge. Early in the spring the golden elder gave us quite a little color, during the latter part of the summer the phlox, with its many bright colors, has been the center of attraction, while just as these flowers were commencing to lose their brilliancy the hydrangeas began to come into bloom. Even after all these have either disappeared for the winter or are only leafless branches, we still have in their rear the hedge barberry with its early autumn tints and its red berries, which look cheerful and bright all winter. So in this border alone it is arranged to have something that will prove to be attractive to all seasons.

A view of the garden made in 1908 before the development



The plan of the garden



A view of the garden made in 1909 after the development



AUTOMOBILING



The Modern Low-Priced Car

By Roger B. Whitman



THE automobile buyer faces no such questions in 1910 as confronted him a few years ago, when all that was expected of a car was that it would run. At that time the gasoline engine was not understood as the engineer understands it to-day, and all of the parts and appurtenances were undergoing a process of evolution that resulted in vast differences between the models of two successive years. Each make had some peculiarity of design, and the selection of a car was complicated by the difficulty of getting definite information on performance.

There were reliable cars, of course, but their initial cost and the expense of operation made their ownership possible only to the very well-to-do. The car that could be bought by the man of moderate income required close attention, and the adjustments and repairs that were a constant necessity left him little time for anything else. If these were in the hands of a repair man, the monthly bills were out of all proportion to the mileage covered and the pleasure obtained. Automobiling at that time was unquestionably a diversion for the rich, and it is popularly supposed that such is still the case; but as a matter of fact, the man of moderate income can to-day purchase and use a car at an expense that is well within the bounds of reason.

The primary cause for this is found in the relatively close understanding of engine and car design that obtains to-day. The systematic experimental work that has been carried on in the large factories has resulted in a refinement in design and an approach to a standard that place automobile manufacturing on as economical a basis

as is possible in the production of any other mechanism.

The moderate price at which an automobile may be bought is not due to the use of poor material and cheap labor; on the contrary, the low-priced car of to-day is better in quality than the highest grade cars of six years ago.

In the early days of the automobile industry, the manufacturer was under the necessity of making all of the parts; to-day, the factories actually making even 75 per cent. of

the parts that they use are in small proportion to the number of producers. A few years ago, when a manufacturer purchased his engines, change speed gears, or other parts, he concealed the fact; to-day, a constantly increasing number of firms make it no secret that their cars are assembled in whole or in part. It is to these changes in policy that the excellence of the medium-priced automobile is largely due.

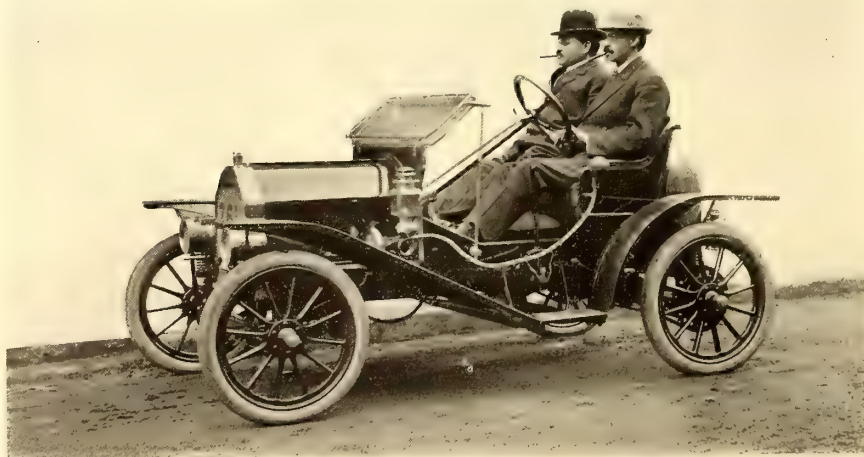
The manufacturer of a complete car is under the necessity of maintaining an experimental department in which he can try out suggested improvements on all parts of his chassis. This is expensive work, and a proportion of the cost of the department must be included in the price of every car sold. The maker of an assembled car is under no such handicap, for each of the firms with which he does business will carry on only such experimental work as is required for his special line, and the expense is borne by so great an output that the individual proportion is negligible.

There was a time when an assembled car was undoubtedly open to suspicion, for however

desirous the makers of its parts might be to do good work they had neither the knowledge nor the facilities that would make it possible. These same companies now possess



A 20-H.P. runabout; price, \$1,000



A 10-H.P. single cylinder runabout; price, \$485.

enormous plants, their designers and equipment are the best obtainable, and their products embody the latest and best in the practice, material and workmanship. Assemblers thus have parts at their command that are of a high degree of excellence, and can buy them at prices that are far below what was charged for the weak and faulty product of former years.

The low prices at which assembled cars can profitably be sold have forced the builders of cars of competing grades to manufacture on a very large scale, in order to bring down costs through economies possible only with quantity production.

Such a firm equips its factory with jigs and special tools for every operation, and makes it an inviolable rule to accept no order that calls for even a slight deviation from the standard specifications.

When a manufacturer turns out twenty thousand cars a year, it is not only justifiable but necessary for him to invest very considerable sums in special machinery of all kinds that for a smaller output would be inadvisable. One manufacturer has spent \$40,000 for dies to produce a rear axle housing; on a production of one thousand cars, the charge against each for this would be \$40. With an output of twenty thousand cars, however, the charge of \$2 against each is little enough for the purchaser to pay for so excellent a feature. A recent development that illustrates the endeavor to reduce manufacturing costs is the establishment by some of the leading producers of assembling shops at the large centers. To these are shipped parts in sufficient quantity to build the cars required for that locality,

and as there is no equipment of machine tools, the expense is slight. The freight rate on unassembled parts is much lower than on complete cars, and the saving effected in

time and convenience as well as in money makes the system a satisfactory one.

However it may have been in the past, the present-day manufacturer of moderate-priced cars makes no more than a legitimate profit. One of the largest producers stated recently that his profit on a \$1,000 car is less than \$100; this is not excessive when one considers his enormous investment in material and parts, his really vast equipment of machine tools, and his labor expense.

It has been said that any average engineer can design a car to sell at \$4,000, but that the greatest skill is necessary when the selling price is to be less than \$1,000. How-

ever that may be, the medium and low-priced cars on the market show exceedingly clever designing, and bear every indication of the highest grade of mechanical engineering. Being light in weight, the material entering into their construction is selected with the greatest care, and it is typical of the automobile industry that many of the alloy steels in common use were hardly more than laboratory curiosities five years ago.

The whole tendency of design is to reduce weight and machinery and assembling costs, but it is rare to see a case where strength and durability have been sacrificed for economy. One of the features of the 1910 cars is the casting of the four cylinders in one piece, which results in a considerable saving in weight and cost, with no apparent reduction in strength or ability.



Another 20-H.P. runabout; price, \$750



A 22-H.P. runabout; price, \$900



One of the latest runabouts; price, \$750



A reliable touring car; price, \$950

The increasing tendency to adopt the gravity system of water circulation is another economical move, for it permits, the suppression of the pump. The mechanical lubricators that were formerly in general use have been abandoned in favor of a single pump located in the crank case, which is not only less expensive to build and assemble, but makes lubrication as positive and unfailing as it well can be. The magneto is now the standard equipment even for cars of very low price; and quite frequently it is the sole means of ignition. An advantage that may be gained through its use is that the spark may be maintained at a fixed point, and therefore the spark control lever and its connections may be done away with. The locating of the clutch and brake pedals on the gear case reduces the cost of assembling, for when they are hung on a rod passing across the frame, as was the practice in former years, accurate fitting is an absolute and costly necessity. When the engine, change speed gear and rear axle are separate units, assembling is complicated by the necessity for setting them accurately in line; in a great number of 1910 cars the change speed gear is either built in with the engine or the rear axle, and the cost of assembling is reduced in consequence.

In spite of the excellence of the 1910 cars, it must not be assumed that the limit of perfection has been reached. Some of the work turned out by the designers shows that they have followed a common path, but in many cases there

are differences that are not easy to reconcile. The perfected car cannot come until the efficiency of one definite construction has been recognized, and its proper proportions demonstrated. The great variance in the designs of to-day is evidence in itself that there is still much to learn, for otherwise as an example, there would be less difference in the dimensions of engine bearings than is now noticeable in different makes of engines of the same power. The relation of bore to stroke is the subject of a vast difference of opinion at the present time, and even the relative length of the connecting rod is by no means fixed.

Having produced cars that will run, and that can be depended on for steady service, the problems now before the designer have to do with the increase of efficiency and economy of operation. At the present time it is doubtful if any manufacturer knows what proportion of the power of his engine is absorbed in operating the valves, or in driving the magneto and pump, but these and other far more complicated details must be worked out in the future models.

If the principles of the present engine are adhered to, the coming years will bring a closer and more accurate knowledge of the cycle, and a general adoption of the features and relative dimensions that survive the ordeal of usage. For the car owner this will mean greater economy in the use of fuel, increased simplicity in construction, and the reduction in price that is the invariable result of standardization.

The Alteration of the Colors of Flowers by Cultivation

By Prof. F. Hildebrand



IN GENERAL, all the flowers of the same species, in the wild state, have the same color. For example, all plants of crow-foot or buttercup and dandelion have yellow flowers. In a few species, different colors are found. For example, the flowers of the milkwort (*Polygala vulgaris*) may be blue, violet, red, or white. Much greater variation is shown by cultivated plants. In these the variation of color of the flowers appeared long ago, but in recent years, many new colors have been produced which had either not hitherto been observed, or which, if they did appear occasionally, were not selected for preservation and development. The floriculturists of the present day carefully observe and endeavor to fix every new shade, even if it is not particularly beautiful, for the desideratum is novelty, and there is no telling what will please the popular taste. But in these attempts to obtain new colors in flowers, the propagator is entirely dependent upon the innate predisposition of the particular species with which he is working. He can by no means obtain every desired color. In the following sketch will be mentioned, first, a few cases of species in which a color has been obtained, which was formerly considered impossible. Some other examples will be adduced to show that in certain species a great many new colors and shades, but not all colors have been obtained. Finally, a few other cases will be quoted in which the flowers of a species have shown little or no variation in color during many years of cultivation.

A species of primrose (*Primula acaulis*) in the wild state, always has lemon yellow flowers which vary only slightly in tint. Cultivation has produced both lighter and darker shades but, until recently, no color but yellow. Hence it was the more surprising when, a few years ago, a pure blue

variety was produced, which has since retained its general color but has developed all shades, from the palest sky-blue to the deep blue of the corn-flower. The Chinese primrose (*Primula sinensis*), when cultivated in the garden, bore until recently only red and white flowers. In this species, also, other colors have lately been produced, not only violet but also blue, though not so pure a blue as that of the species first mentioned. Another example is offered by the gladiolus, which formerly bore only white and red flowers but has recently developed a blue-flowering variety. A case of a somewhat different character is presented by the asters, which have long shown a great variety of colors, but in which recently a great many new shades have been produced, including some which would not at one time have been considered beautiful, for example, copper-color.

Very numerous, on the other hand, are the species which have long shown great variation in color and have recently developed many new shades, with the exception of blue. Especially conspicuous in this connection is the dahlia, which is now found in every color except blue, although many propagators are making earnest efforts to produce a blue dahlia, which would bring great profit to its originator. A blue carnation would be equally valuable but it has not yet been produced, although the colors of carnations have lately been enriched by many new shades. The new varieties of canna also show great diversity of color, including almost pure white and a beautiful light pink, but a blue canna has not yet appeared. In the begonia not only blue is lacking, but also all shades from red to violet. Finally, we may mention the variety of poppy called the Shirley, which is greatly admired for its play of color. Here, however, the colors range only from white to rose and vermillion. Blue and violet colors are completely wanting and so is yellow, which is very common in the begonia.



An excellent wall surfacing is a hard cement finish

The Out-of-Door Living-Room



By John A. Gade

HOWEVER small or inexpensive the house is to be, it may still be so arranged as to have an out-of-door room, serviceable both in summer and in winter. It can be built either originally, or added later, in a very inexpensive manner, for it needs little of the trim and finish of the interior rooms of the house. It is a half-way place between indoors and out-of-doors, its object being naturally to provide as much sun and light and air as possible without too much exposure. Being half piazza and half summer-house, and certainly intended for use in early spring and late fall, if not during the winter, the first considerations in its planning are those of protection. The flooring will in summer naturally at times become drenched by rain. It should thus be waterproof—of brick, quarry tile, cement, or of one of the several excellent patent waterproof floorings. All these are cool and clean, may be laid in any color, and easily washed; and in winter, if too cold, may be covered with rugs and matting. They cost, however, more than a wooden floor, and must generally be laid upon some more or less expensive bedding of concrete and wire lath. If expense is the only consideration, a North Carolina pine flooring should be used, one and one-eighth inches thick, instead of merely seven-eighths of an inch thick, as the interior floors of the house. The beams which carry it should further be laid a sufficient height from

the ground level outside to allow twelve inches of air space underneath, giving circulation of air and hindering rotting. The wooden as well as the waterproof flooring should further be laid to drain, pitching about one-eighth of an inch to the foot towards the side best adapted to carry off the water. The doors and thresholds between the house and our room are important, for they will probably be used more than any others in the house by master as well as by servants. French windows are the best means of communication. The bottom rail should be at least twelve inches high. Glazing to a point nearer the floor is useless, as the glass will constantly be broken and no light is admitted below. The leaves of the windows should be furnished with hooks or catches, so that they may be fastened back, and made at least seven feet high. The nosings of the thresholds should be rounded so as to hinder stumbling, and not raised over three inches above the outer flooring.

The walls and ceiling must be built of durable materials.

Plastering them similarly to inside surfaces is unsatisfactory. An excellent and inexpensive method is to give them a hard cement finish, either smooth or more or less rough. Any color desired may be added in the finish coat. If the cottage is covered with shingles, cover similarly, or with wooden panels or sheathing. But naturally what we are striving to obtain is as little wall surface and as much trees or sea and sunshine as possible. In view of this fact, consider carefully what



A successful method of curtaining with inexpensive chintz



The walls, like the cottage, are covered with shingles

side of the house is the best for our purpose. Generally the south-east side of the house is preferable, as receiving the morning sun and the afternoon shade. Further, where can the absolutely necessary supports for superstructure, intermediate glazing, screens, shades, etc., best be located? Do not place them where the breeze comes from, or the view is best, and, above all, do not place horizontal subdivisions for glass or screenwork where they are liable to intersect one's line of vision, either sitting or standing.

If the room is merely intended for summer use, and the platform may be built waterproof, nothing is nicer than to place it sufficiently low to enable one to step directly upon it from the surrounding lawns, unimpeded by rails or wainscoting. If, however, it is also meant for the winter, enclose all except the exit with a low rail or parapet about three feet high. The bottom rail should be raised a little from the floor, so as to allow the water to run off in summer, and its top rail given a good breadth and finished with a wash and proper rebate to take the storm sash and

copper screws whenever it is deemed necessary to set up or take down the sash. The sash should always be made in sections, so as to be easily handled as well as stored in the cellar or barn. Double hung sash are better than casements, for they may be opened as little or as much as desired, according to the wind and the weather, and are more liable within their tracks to keep from shrinking and swelling. The catches and lifts should be rust-proof and finished so as not to need cleaning. Obstruct the view as little as possible. Small panes and diamond-shaped lattice work may seem attractive, but perfectly plain plates of glass show you more of the trees and sky, and are very much easier to keep clean.

There are few articles made of wood where good quality is as essential as in screens. The wood must be thoroughly kiln-dried and protected with sufficient good paint or varnish to keep the water from penetrating. Clear white pine is the best material, and the frames should at least be one and one-eighth inches thick, the joints mortised and tenoned,

glued and wedged. The screens should be numbered with simple brass tacks with duplicate numbers on the frames to avoid confusion when placing them in the spring. The ideal, though more expensive, method is to procure screens with metal instead of wooden frames, which neither warp nor shrink nor swell. In all cases it is essential that the netting is securely fastened to its frame and doubled on itself where it is attached, hindering it from becoming loose and baggy by being imperfectly fastened by tacks. The netting must not be too light; no less than one "fourteen mesh" to the inch will exclude the mosquitoes; it must be evenly woven, and certainly of copper, so as not to rust. Bronze wire is the best. It is hard and strong, being made of solid bronze metal. The screen doors leading out should have spiral hinges so as to close even after a forgetful maid.

Heating and lighting must be thought of during the early stages of construction; the tubing and wires run back of the visible ceiling and wall surfaces to the necessary lights, with their switch inside the house.



Obtaining as much sea and sunshine as is possible

A base plug or two, for reading lamp connections, gives a great deal of comfort, and ought not to cost much over six dollars apiece. The best place for the radiators is next to the little parapet and under the shelf of the window sills. Here they take care of most cold air, and are out of the way. Connections should be made so that they may easily be reached and the radiators disconnected like the windows in the spring. A single run of pipe should span the width of the piazza room, as trouble and leaks happen at joints, which thus should be handy.

The floor timbering should be run with forethought for the heating pipes, both perpendicularly to the main wall of the house, on to which the piazza abuts. This allows heating pipes, with their packing and boxing against frost, to be run between the joists, and no cutting away and weakening of these become necessary.

One flue more or less to a chimney does not add much to its expense. If it thus is possible to place the chimney of the room which is adjacent to the piazza in the wall between the two, it becomes very simple to obtain a little fireplace in the out-of-doors room, adding much to its heat and cheer during the colder weather. If the wall is of stucco, a few simple stucco mouldings around and on top of the brick opening may be formed by the plasterer without additional charge, and give all the mantel and shelf that is needed.

The room must be covered and be water-tight. Supports and hammock or plant hooks, in the same way as ceiling lights, must be thought of before the finish. A good and inexpensive method of finishing the under side of the ceiling is with matched and beaded, tongued and grooved half-inch or seven-eighth-inch pine sheathing, left unstained, but filled and varnished with spar varnish. Weather will not affect this finish, and it will look well. As the roof covering must be made tight, it is very simple to construct it with a flat deck, and in such a manner that it may serve as an uncovered piazza leading out of a second-story bedroom, at the same time that it serves as a covering for the first floor out-of-doors room.

The flooring of this second story piazza may be formed in as many ways as that below. Flat roofing tile laid in cement, with waterproofing underneath, is excellent. An inexpensive covering is heavy canvas tacked down in strips with staples, after being painted on its under side and stretched over the boarding. On its upper surface the canvas should be fairly soaked in paint, so that every pore of the fabric is filled with oil. Six coats are none too many. On the edges and along the angle where the flooring meets the uneven surface of the outside of the house, are where water is liable to beat through. Here the joints should be carefully flashed with tin or lead.

Though the sun may be the pleasantest feature of the out-of-doors room in early and late seasons, it is liable in the middle of the summer to make the room unlivable, unless some protection is afforded. The outside ceiling beams should thus be made sufficiently deep to allow, inside the



The possibility of glazing without obstructing the view

screens, for a space into which bamboo shades, Venetian blinds or awnings may be hung and conveniently rolled up or down and the room more or less added to those of the inner house, and furnished accordingly; this pocket will very conveniently serve for the curtain poles.

The decoration and furnishing of the room is a simple matter, after the structure has been properly carried out. If the carpentry and masonry are correct, the fitting up almost speaks for itself. Nothing heavy or stuffy will look right, nor will objects that are easily spoiled. Trellises, in connection either with the flowers and vines or merely as decoration of the wall surface or posts and columns, are of the best forms of ornamental treatment. Tiles and pottery and earthenware, wooden benches and bamboo and wicker chairs are all fitting, as belonging half in the garden and half in the house. It is really a little "summer-house" in itself and should be treated accordingly. Indian carpets



The best place for the radiators is under the window sill

and mattings are not spoiled by a thunder shower, where upholstery and woollen carpets will be. Expensive concrete or marble seats are just as suitable as the rudest settees and chairs built by mountaineers from the rough boughs, all employed according to the elaboration of the room. They all belong out of doors. A handsome out-of-doors living-room may be finished with a terrazzo or mosaic flooring and with wall panels and fireplace formed and ornamented with colored terra-cotta panels. If water piping is introduced, a fountain surrounded by plants forming, as it were, a small conservatory on the sunny side, will make a fine termination. And inside the outer columns, carrying the structure and roof above, are French windows between patterned trellises running directly to the floor on the exposed sides.

had best be trellised, thus keeping out but little air, but affording considerable privacy. It should, lastly, be removed from servants' hall, laundry and kitchen. It is principally after dinner that the master of the house will enjoy it, and too near to the washing of dishes or conversation of maids may spoil its attractions.

In a similar manner, the mistress' bedroom can be placed over the living-room; the deck over the out-of-doors room will be found very convenient for her morning use.

How best to cover this deck is quite a problem. Roofing it over permanently is expensive in itself, entails stronger supports and foundations to carry the added weight, and darkens the bedroom or rooms inside. It can relatively inexpensively be covered by an awning on an iron roller, carried by supports or hooks against the side-wall of the house,



A projecting shelf is an admirable place for plants and flowers

The location of the out-of-doors living-room is not only of importance from a point of view of sunshine and cool breezes, but also in relation to the other rooms of the house and the adjoining roads and neighbors. A careful consideration of its placing is one of the most important matters in the very earliest stages of the house. It *must* be placed where there is privacy. If possible it should lead out of both living-room and dining-room, or at least connect easily with the pantry service, so that it may also be used as a breakfast-room, or to dine in during hot summer evenings, when there is not a breath of air inside the house proper. It should be located where one may stretch out without fear of being caught by callers or unwelcome visitors.

If one end faces the driveway or approach, this side

and outside supported by small iron posts set in iron floor sockets in the outside angles.

The sockets should be built into the flooring prior to the canvassing, and the joints caulked tight. The large house-furnishing stores will provide reasonable estimates for the furnishing and setting complete of the awning, rods and braces.

Purchase the covering of colors that will not fade immediately, and also sufficient extra awning cloth, arranged to lace, so as to be able to close in, if desired, a couple of the sides, and procure an out-of-door bedroom or writing-room hidden from view. Here the lady of the house may enjoy lounging before being dressed for the day, may dry her hair after shampooing, or enjoy the air and sunshine without being seen by outsiders.

Some California Bungalows

By Helen Lukens Gaut



THE widespread interest in the building of a bungalow in the past few years has inspired the subject of this article. The group of bungalows presented is of the kind to be seen along the Pacific Coast, and at the same time will be found adaptable, with a few moderations, to any place or clime. The great desire of the city dweller of moderate means is to live in the country during the summer months or a part of the year, and how to do it has been a problem which he has found very hard to solve, on account of the expense involved. This question, however, is answered, to a certain degree, by the bungalows which are presented in this article, as they show how it is possible to have a small one in the country at as low a cost as \$150.

The first little bungalow (Figs. 1, 2 and 3) presented in this series was built for F. L. Orr, Esq., at Pasadena, California, for \$560. It contains three rooms, a large closet, bath and screened porch, as well as a veranda at the front of the house. The exterior of the bungalow is good, the plan is excellent, and the cost is low, a combination certainly in its favor, especially for those of moderate means, who just want a place of this kind that will answer the requirements for a time at least.

In construction it is too light for an all-year use in a cold climate, but for a moderate one it is an admirable type. The exterior walls are built of rough one-inch by twelve-

the other, and are stained a light green. Under this woodwork there are placed four-inch by four-inch beams, spaced two feet apart, and extending from end to end of the room, and stained black. The joints of the boards showing between the beams are covered with redwood strips left in their natural color, while the balance of the woodwork, including the paneling, is stained black. The brick mantel has been painted green, to correspond with the walls and the ceiling boards. There are three latticed windows in this room, each extending twelve inches beyond the main wall, making an attractive window-ledge on the inside, and breaking the straight lines of the exterior. The bedroom walls are covered with green burlap, and the boarded and battened ceiling is painted a light yellow. The window-ledge and the rest of the interior woodwork have been painted white. The walls and ceiling of the bathroom and the clothes closet are of twelve-inch boards and battens painted white.

The cost of this bungalow was as follows:

Lumber, windows, doors and screens	\$295
Labor	125
Plumbing	140

Total \$560

The bungalow shown in Fig. 4 was built for Mr. Thomas G. Nester, at Pasadena, from plans prepared by B. Marshall Wotykins, architect, of the same place. The cobble-



Fig. 1—A bungalow built for the low cost of \$560.00

inch boards, with the joints covered with three-inch battens, all of Oregon pine. The walls of the building are treated with a dark green stain. The shingled roof and chimney and window frame have been painted white. The house is built on four-inch by four-inch posts, and is boarded around the base. The living-room is treated in the most harmonious manner, composed in a combination of wood and canvas, the walls being paneled to the height of two feet six inches, with eight-inch Oregon pine boards of good grain and smooth finish. Above this panel-work the walls are covered with a dark green canvas, on which narrow vertical wood strips are placed at intervals of twelve inches, giving the effect of a paneled wall. The ceiling of the room is unique. Eight-inch Oregon boards extend from one side of the room to



Fig. 2—The living-room in the bungalow shown in Fig. 1

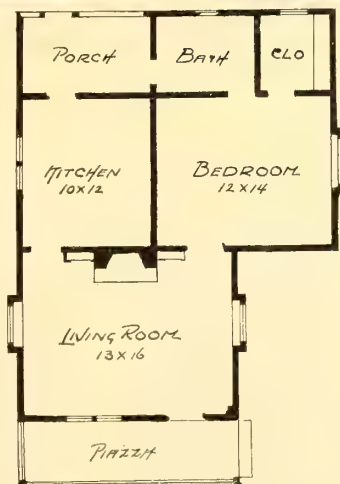


Fig. 3—First floor plan

stone chimney and terrace wall are the chief characteristics of the exterior of the house. The underpinning is of cobblestone, the first story is covered with clapboards, and the gables with shingles. The front door, with its four square lights, is an artistic feature of the house.

The next house, shown in Fig. 5, was built for \$250. It is a simple little dwelling, containing two rooms and a bathroom, with a pleasing setting about the exterior.

The interesting bungalow shown in Fig. 6 was built for Miss Young at South Pasadena. It is constructed of clapboards for its exterior walls, and is covered with a shingled roof. A quaint porch is placed in the center of the building, which is reached from the street by a walk extending directly to the front door. It cost \$500.



Fig. 4—The cobblestone chimney and terrace wall is the feature of this bungalow



Fig. 8—A four-room bungalow built of cloth and paper, cost about \$150



Fig. 5—A tent house containing two rooms and bath, cost \$250



Fig. 9—A bungalow of six rooms and bath, with plastered interior, cost \$1500



Fig. 6—An interesting clapboard bungalow, cost \$500



Fig. 10—A bungalow with three rooms in basement, and five on the main floor, cost \$2,500



Fig. 7—A bungalow of more pretentious character, cost about \$3,500



Fig. 11—A bungalow designed by the owner, containing two rooms, cost \$150



Fig. 12—A grouping of plants is the feature of this bungalow of stone and shingles



Fig. 16—A bungalow built of concrete and shingles with a low shingled roof



Fig. 13—A simple bungalow of matched boarding, cost about \$300



Fig. 17—A shingled bungalow with four paneled rooms and bath, cost \$450



Fig. 14—A bungalow of three rooms with a panel interior, cost \$500



Fig. 18—The cobblestone and brick chimney is the principal feature of this bungalow



Fig. 15—A bungalow with a boarded exterior containing four rooms and bath, cost \$600



Fig. 19—The trees form an attractive setting for a bungalow of this style

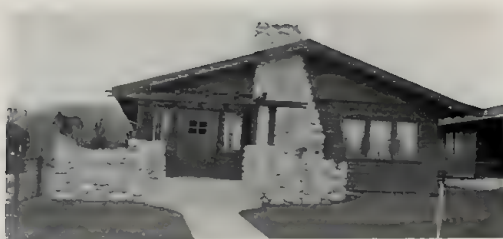


Fig. 4—The cobblestone chimney and terrace wall is the feature of this bungalow



Fig. 8—A four-room bungalow built of cloth and paper, cost about \$150



Fig. 12—A grouping of plants is the feature of this bungalow of stone and shingles



Fig. 16—A bungalow built of concrete and shingles with a low shingled roof



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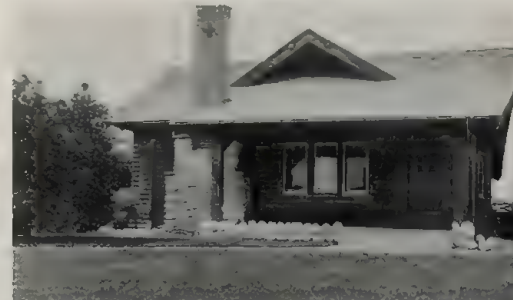


Fig. 18—The cobblestone and brick chimney is the principal feature of this bungalow



Fig. 7—A bungalow of more pretentious character, cost about \$3,500



Fig. 11—A bungalow designed by the owner, containing two rooms, cost \$150



Fig. 15—A bungalow with a boarded exterior containing four rooms and bath, cost \$600



Fig. 19—The trees form an attractive setting for a bungalow of this style



Fig. 20—A bungalow of simple design built for \$375

The bungalow shown in Fig. 7 cost \$3,500, and was built for G. C. Gainsley, Esq., at Alhambra, California. This is a more pretentious bungalow, with cobblestone chimney and columns for the piazza, and a second story containing extra rooms.

The bungalow shown in Fig. 8 was built for Miss Cora Luce at Pasadena. It comprises four rooms and a large closet, and affords an excellent example of a combination of cloth and paper at the small expense of \$150.

Mr. E. W. Ford built at Pasadena the bungalow shown in Fig. 9. It has a cobblestone foundation and a shingled exterior. It contains six rooms and a bathroom. The interior is plastered, and the woodwork has a burned finish effect. Its cost was \$1,500.

The bungalow shown in Fig. 10 was designed and built by Mr. L. Isaman, also at Pasadena. This bungalow is erected on the side of a hill, thereby providing a place for the kitchen, dining-room and servants' room to be built in the basement, while the main floor, which is on a level with the street, contains five rooms. The house is constructed of a combination of stone, clapboards and shingles.

A simple little bungalow, illustrated in Fig. 11, was designed and built by Mr. H. Welz, at Los Angeles, California. It contains only two rooms, and the cost was \$150.

Through the grouping of plants in an artistic profusion, the bungalow presented in Fig. 12 has a very pleasing setting. It was built for E. D. Tyler, Esq., at Pasadena.

The bungalow built for Mary Deveres, and shown in Fig. 13, is constructed of narrow battens for the exterior, and the cost was about \$300.

The bungalow illustrated in Fig. 14 was designed by and built for Mrs. B. I. Strickland at Los Angeles. It has an attractive exterior, and a front door that is worthy of note. The interior contains three rooms, which have paneled walls. This bungalow cost \$500.

Fig. 15 shows a bungalow of simple construction, containing four rooms and a bathroom, and costing \$600. It was built for Mr. Nester at Pasadena, and another, erected for the same owner, is shown in Fig. 16. The latter is typically a bungalow, with all the six rooms and a bathroom on one floor. The exterior is built of concrete and shingles.

The bungalow shown in Fig. 17, was built for J. A. Bangle, at Pasadena, and contains four rooms and a bathroom, which are paneled and beamed. The cost was \$450.

An interesting bungalow is the one shown in Fig. 18. It



Fig. 21—An interior view of the living-room of the bungalow shown in Fig. 20

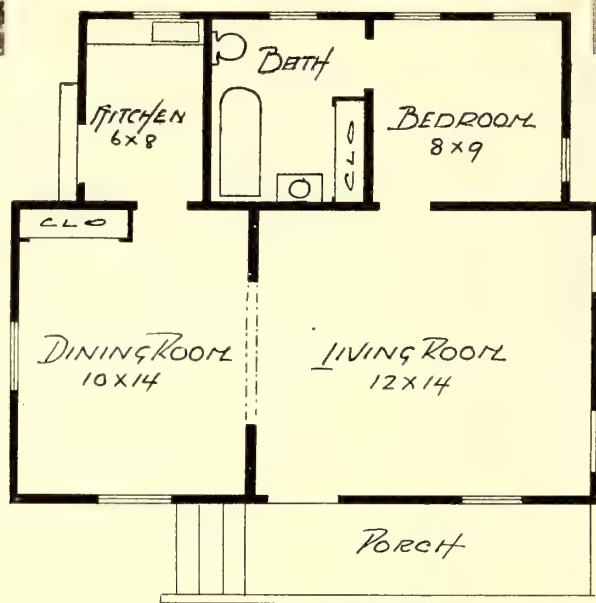


Fig. 22—First floor plan

has a combination chimney of cobblestone and brick, which provides the attractive feature of the exterior. It contains five rooms, a bathroom and a basement. It is plastered and beamed throughout the interior.

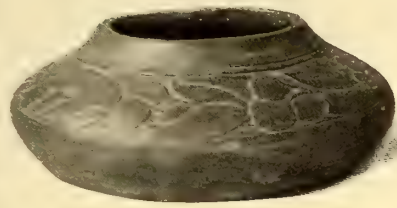
The bungalow shown in Fig. 19 was built for Mr. M. Dietrichson. It is constructed of cobblestone and shingles, and has a very pleasing setting.

The bungalow shown in Figs. 20, 21 and 22, is the home of Miss Ida Pauline Bear. It is remodeled from an old building removed from an adjacent piece of property to its present site, and renovated into a livable dwelling. The original building measured twelve by twenty-four feet and contained one undivided room. It had a good shingled roof with wide eaves, a good firm floor, a substantial up and down siding of rough twelve-inch redwood boards and three-inch battens. All the timber was in excellent condition. This is the building as it stood before the transformation. After the building was moved and placed in its present position, it was partitioned off into two rooms, a living-room twelve by fourteen feet and a dining-room ten by twelve feet. At the back, a bedroom, a bathroom and a kitchen were added.

A porch with a pergola roof of rough two by four foot redwood timbers, was extended almost across the entire front. On the outer side of the porch rail, a fourteen foot flower box was made of one by twelve foot rough boards. This box, with its bright geraniums and trailing vines, adds wonderfully to the appearance of the house.

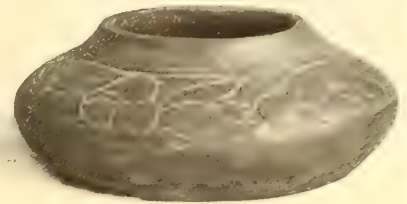
The floors of the interior are oiled and stained an oak-colored brown, while the woodwork has been finished in the same tone. The living- and dining-room walls are paneled to the height of five feet. The ceiling of the former is of tongue and groove beading, stained dark brown. Above this paneling is a three-foot frieze of tan burlap. In one corner is a small built-in bookcase, effectively hung with stenciled curtains. The frieze above the paneling in the dining-room is of Java coffee matting, or sacking. This is an inexpensive material, and makes a most attractive wall covering for use in small cottages and bungalows. Each sack, when split, contains four yards, thirty inches wide, and costs but fifteen cents a sack. Waterproof curtains have been so arranged that they can be lowered during a storm.

Actual cost of this bungalow was as follows: Old building, \$100; moving old building, \$25; plumbing, \$150; lumber, \$70; carpenter work, \$30. Total, \$375.



Pottery Making for the Amateur

By Mabel Tuke Priestman



CLAY suitable for making pottery can be found in all parts of the country, but for a beginner it is best to purchase a potter's clay, usually sold in the neighborhood at a store that supplies equipments for the use of artists and craftsmen. These prepared clays cost one or two cents a pound in the dry and only require the addition of water. Take an equal quantity of clay and water, and allow the clay to soak for a day. Then thoroughly knead the moistened clay until all the air bubbles are worked out. It is most important that the kneading be thoroughly done so that there may be no disappointment later when the pottery is fired.

The best-known clays are the blue or ball clay and fireclay, though some prefer mixing these two together. Some potters buy their clay in cake masses and pound into powder form. They then put the powder through a sieve and add the pulverized clay to the water. This does away with the necessity of a great deal of kneading. If clay is too wet, water can be poured off after the clay is thoroughly mixed, or it can be spread upon plastered slabs and left in the open-air, when the plaster will absorb the superfluous moisture. The clay can be kept ready for work in an earthen vessel containing a little water. Deep holes are made in the clay into which the water is poured. It may then be covered with a damp cloth and an earthen lid. If some time elapses before the clay is used and it dries out, it can be easily re-mixed.

The preparing of the clay is very much like bread making. A lump of moist clay, about ten or twelve pounds, is laid upon the table and kneaded. Then it is divided with string into halves or quarters and each piece separately worked. It will be found that clay that is to be used on the

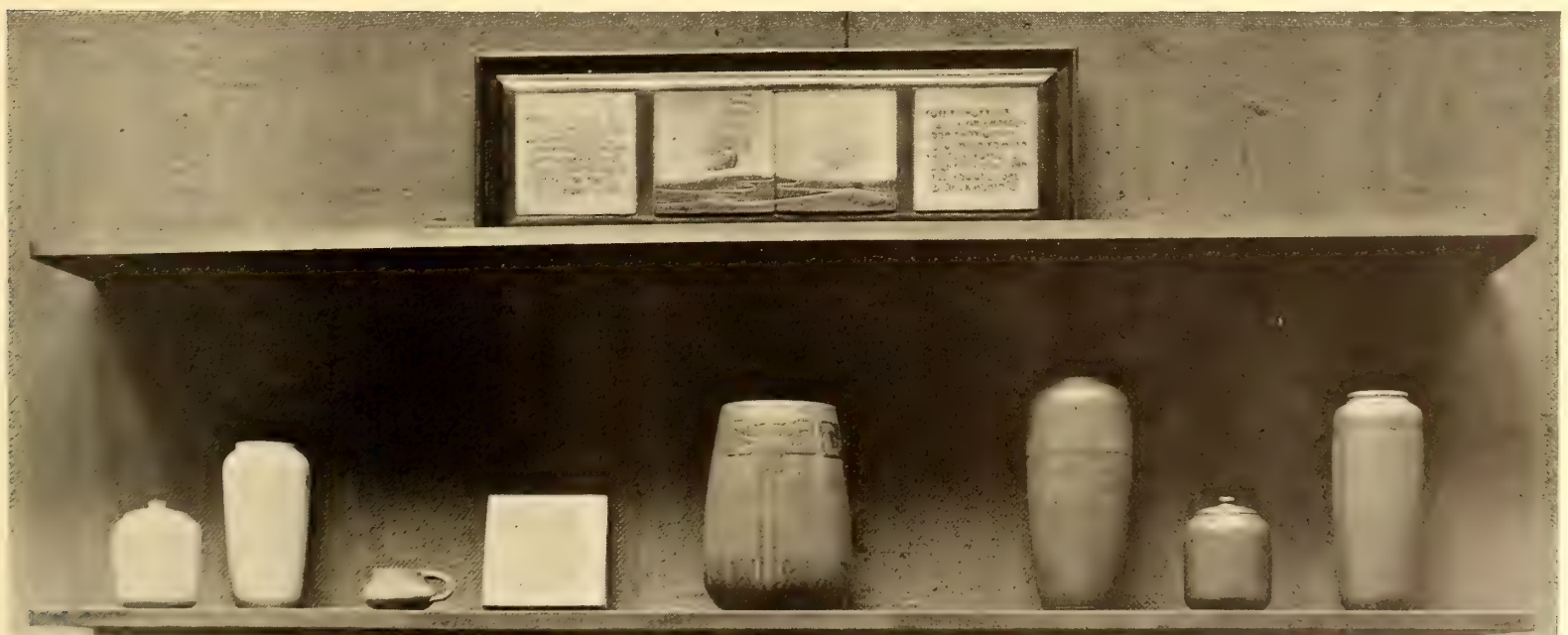
wheel will require more kneading than the hand mold or coiled pottery.

Many tools are sold for making pottery, but fingers or tools that represent fingers, answer the purpose although incisions for decorations will have to be made later with some sort of tool. Some find the boxwood modeling tools very useful. Among the tools will be found a pointed one like a pencil and another pointed and flattened, sharp at one end and blunt at the other. A tool with flattened ends is useful for cutting away the background, when low relief is needed.

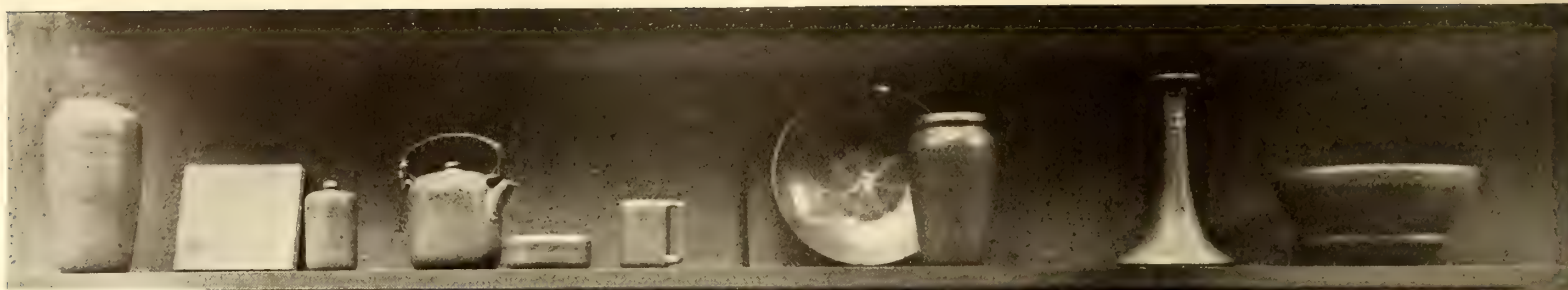
In looking at the tools sold for potters they so resemble a crochet hook, lead-pencil and an orange stick that no potter need delay because of not being able to get the special tools. A loop of wire can be used for scraping off superfluous clay if it is too large.

The easiest piece for a beginner to make is something in a bowl form. Take a piece of clay, the size of an apple and hollow it with the fist until it is the shape of a bird's nest. Then add to this, small pieces of clay with the fingers. One hand must be placed inside the bowl to support the edges, while the right hand adds the clay. Strive to preserve a uniformity of thickness, as it must not appear clumsy. Care must be taken not to allow the wall to become too thin in parts. The clay will have a tendency to sag but this must be guarded against. While the bowl is being built up the clay must not be allowed to dry out. Moistened cloths must be laid over the parts not being worked.

When the necessary size is reached turn the bowl upside down and scrape it with a piece of cardboard or a tool, to the desired form of the base. If the walls of the vessel have become weak from building too quickly it must be



Vases and jars



A shelf of fine shapes

allowed to dry through the night and be finished next day. A very practical way of aiding the shaping of the vessel is to cut a piece of cardboard the contour of the bowl and test the shape with the cardboard outline. The bowl may then be smoothed with an oval steel tool which is bent to fit. Hold it at right-angles and work with short strokes in different directions, continuing this both inside and outside the bowl until every part of it is smooth and free from indentations. Have at hand a mixture of clay and water of the consistency of cream; this is known as *slip*. If a depression appears, wet the spot with slip, and fill in with fresh clay.

The next process is to smooth the bowl with a damp sponge and polish with the fingers. Do not hold the pottery by the edge or it will break off, but after cutting it away from the board with a piece of wire, hold it in the hollow of the hand. If the weather is warm it may be necessary to sand-paper the bowl instead of dampening it with the sponge as pottery is apt to become too dry in hot weather and in this state the addition of water might cause it to crack.

It is very important to have the bottom of the bowl perfectly true. Pour a little water on a ground-glass slab and move the bowl rapidly round and round on the wet surface and slide it off the glass on to the table before it clings to the glass.

There are several ways of coloring and glazing pottery. Clay that is simply baked without glazing will not hold water perfectly. We will suppose the bowl is to be green with a dull porous finish. It will be necessary to color it in the following way. Ordinary dry colors can be obtained from any artist's supply store and when mixed with the right liquid can be applied to the clay. If it is decided to have a dull green mat finish, the green can be made by mixing oxide of copper and potassium. Mix with this a solution of gum arabic and water which must be of the consistency of thick cream. Apply the color to the moist surface of the clay then put the bowl on one side for two or three hours and allow the color to set. Before the clay is hard the color must be well worked into it with a smooth tool. The back of a wooden spoon is excellent for the purpose. The rubbing of the spoon will impart a gloss which

will be unchanged by the firing. The bowl must not be fired for two or three days, as it must be perfectly dry.

There are other methods of coloring, and one is to mix the pigment with the clay before the vessel is molded; another way is to paint the piece with colored slip which consists of a solution of clay and water, to which color has been added, until it is of the consistency of cream. If desired, a further finish can be given by rubbing floor wax on to the surface. This fills up the pores and gives a more uniform appearance to the pottery. There are so many kinds of kilns, but an ordinary over-glazed kiln is suitable for firing simple hand-made pottery. In almost every town there are kilns to which the craftsman can send his pottery. The artist, colorman or art school can usually give the address where they may be sent.

Another process of making hand-made pottery is the Indian method of building up with coils. A piece of clay is formed by coiling strips the length of the circumference of the vessel. It may be begun by hollowing out a lump of clay as described in the making of a bowl, or the strips of clay can be laid inside a pottery mold and the strips coiled within the mold. To coil in a mold take a piece of clay, knead free from air-bubbles and beat it until it is about three-quarters of an inch thick and a little larger than the bottom of the mold. To make it perfectly smooth it can be rolled with a rolling-pin. The mold must be first dusted with powdered flint which can be shaken through the mesh of the cotton cloth in which it is tied up. Lay the piece of clay into the mold and fit it with the fingers lightly but firmly, then cut an even edge. Now take a coil of clay about an inch in diameter, and long enough to reach around the circumference of the vessel, and one end of it must be shaped into a point, before adding it. Cross-cut the edge of the clay to insure its holding firmly to the coil, and after having brushed it with slip, add the coil, pressing firmly to the foundation piece. For working the edges of the coil to the main piece, use the flat part of the thumb, or the nail of the fore-finger so that the joint in the coil fits exactly. A second coil can now be added but it will not be necessary to cross-cut the edge. Continue adding the coils until the vessel is of the right height. When the top of the mold is reached and more coils are added, be very careful to make



Pottery from the Handicraft Shop in Marblehead



Striking pieces of hand-made pottery

them slope so as to continue the lines of the mold. The vessel must be set on one side to harden, and next day it will be found that it will come away easily from the plastered mold. The vessel should then be turned upside down, so as to have the edge of the top symmetrical, and the hollows filled as described in the making of a bowl. Now is the time to correct any faults in the contour. If a spout is to be added, it can be modeled around a straw, and added to the main piece, as can also the handles. It is well for a beginner not to have them too large or too long, until experience has taught how much weight can be added without breaking off.

The piece of pottery is now ready for ornamenting. Line incision may be done with any of the tools already described. The depth of the lines will depend upon the thickness of the clay. Straight lines girding the vessel or a group of several lines, may be the only decoration. Sometimes a broad band of color may be added, outlined by line incision. A study of the pottery made by the Arizona Indians will give the beginner many ideas for decorating pottery. Simple designs can be drawn with a sharp tool while the clay is moist, taking care to bevel the edges of the design. It is well to go over it again with a wooden pointed tool, making it firm and deep.

As the bowl was finished with a soft mat glaze, I will describe another process for glazing. The inside of the piece of pottery must first be glazed. Glaze can be purchased all ready for use. Take an after-dinner coffee cup full of transparent glaze, and pour it into the vessel, then roll it around until the entire inner surface is covered, then turn the piece quickly upside down, emptying it into another vessel. A good deal of care is needed to prevent the inside glaze from spilling onto the outside. If any of the glaze smears the surface, rub it off quickly with the fingers. The outside finish of the pottery can be an opaque glaze in any color preferred, brown, blue, yellow, red, or green. Mix a half tablespoonful each of stannifere and of china clay, and

one tablespoonful of soft glaze together on a glass slab with a palette knife, add as much gum arabic as will cover a ten cent piece, and enough water to make it as thick as cream, then add the coloring, about the same quantity as the gum arabic, and grind it thoroughly with the knife. A darker tint can be given by adding more color, although it must be remembered that firing deepens the color considerably. Place the vessel upside down and apply the glaze with a large flat paint brush, painting in short strokes in every direction. The bottom will only require one coat; this may be done first. Now paint from the bottom upwards. By the time the entire surface is covered the bottom should be dried. It is best to apply two or three coats, but one coat must be allowed to dry before the other is applied. A dessertspoonful of gum tragacanth must now be added to the glaze, which is applied in the same way as the first coat. The top edges must be glazed when the second coat is added. The third coat is begun at the top; in a few days the vessel is ready for firing.

The above mentioned and many other simple shapes can be molded by coiling and building, and it is well to become perfect in this form of pottery making, before going to the expense of providing a wheel. The wheel is kept in motion with the foot and the hands are used to mold the clay while the wheel is kept moving.



Bruges hand-made pottery

Throwing pottery on the wheel requires experience, but it is one of the most fascinating parts of the craft of pottery-making. Of course the work is much more rapidly done on the wheel and there is more regularity of shape and perfection of finish to wheel-made pottery.

Some of the modern wheels are sold with the slanting bench and these are easier than the more general wheel to which one has to stand. The wheel is started with the point of the right foot swinging from right to left. Several turns are given to start it in motion.

Have ready a piece of well-worked clay in the shape of a ball. Wet the top of the wheel and rub off slightly, leaving the surface moist enough for the clay to stick. If too wet the clay will slide. Now take the clay in both hands and throw it firmly onto the center of the wheel. Dip the hands in slip and rub over the clay so that it is thoroughly moist.

Now set the wheel in motion, and when it is revolving keep the feet on the rest. Both hands are now held round the ball of clay, starting at the bottom and rising slowly, drawing up the clay into a cone shape. It is not easy at first to hold the hand steady while the wheel is in motion, as this only comes with practice. If the clay shifts its position, start again by throwing it on to the center, wetting the hands with slip as before, and shaking the drops over the clay. Lay the little fingers on the board and grasp the clay with the hands, press it into a cone form slowly and



Molding the top of a vase



Some of the most beautiful pottery in America is made at Marblehead

evenly. Then hollow out the piece, the fingers still holding the outer walls, while the thumbs are pressed into the center of the clay firmly and strongly until they reach within a half an inch of the bottom. Experimenting teaches how the vessel can be molded and shaped at the will of the potter. They take beautiful curves and shapes of their own, according to the pressure of the fingers. Some potters make a point of never duplicating any piece of their pottery. Of course, it is necessary to have a certain shape in mind, the pressure of a bowl being different from that of a slender vase. The different arrangement of the hands, to acquire the varied shapes, are found out from experience, but the chief thing to remember is holding the vessel firmly and strongly at the bottom as the wheel turns. When the top is reached, if the shape is not true, start from the bottom and press hardest where the pressure is needed, and lightly where the shape does not require altering. It is important to keep the thickness of the walls even, about one-quarter

of an inch thick. When the vessel is finished, cut the edge with a sharp tool, having first wet it with slip. Place the fore-finger of the left hand inside and cut towards the finger during one revolution of the wheel, and remove the piece cut when the wheel is not in motion. The edges may be softened by the fore-finger and middle finger of the right hand. Wet the edges with slip and hold them straight and firm, and while the wheel revolves, the left hand should grasp the wrist of the right to steady it. Now leave the vessel to stiffen for about a half an hour, then use the hoe-shape tool for removing the piece from the wheel. It must, of course, be first moistened with slip; then run the tool under the bottom and move from the center. When the wheel has stopped it can be removed. In about an hour it will have stiffened slightly and may then be finished off with a smooth-edge oval tool. It is then ready for decorating and may be finished with either of the processes already described.



The Small Kitchen of To-day; Its Planning and Equipment

By Robert Spencer, Jr.



A SMALL kitchen may be likened to a compact little work shop or laboratory. To be a success it must be built rightly, then equipped rightly.

Right building means right planning. The location of the kitchen should give it enough sun-light to keep it sweet, not so much as to make it needlessly hot. The prevailing summer winds should carry kitchen odors away from the house—not into it. The small kitchen may be relatively long and narrow, amply windowed on one side or approximately square, never deep and narrow with windows only at one end.

The smaller the kitchen the greater the need of a small connecting dining-room or alcove for the maid.

As to pantries they can be dispensed with entirely under certain conditions in the modest home. If not, one pantry can be made to do double duty. If a kitchen be of the "pantryless" type at least as much shelf, drawer, cupboard and work-counter room should be provided as in the average kitchen and cook's pantry combined. This can be done in a space 10x11 or even 6x12 feet. While some very cleverly arranged "kitchen cabinets" are ready made, they scarcely provide sufficient shelf and counter space, although wonderfully convenient additions to the old kitchen.

Six feet of side lighted wall space will accommodate a "built-in" combination of shelves, work table, etc., equal to the shelving and countering of the average small pantry.

The refrigerator may be built into the kitchen or in one of the pantries or set in a space provided in the entry. In either case it should have an outside icing door, not only for the convenience of the ice man, but in order that it may serve (where there is no cook's pantry) for cold storage of perishable supplies when not iced.

Side light—preferably from the left—should fall upon the range. The kitchen chimney should be large enough for a ventilating flue, preferably at least a foot square in cross section. For a coal range the vent flue must be separate from the usual 8x12 smoke flue. For a gas range, one flue will do. Whether a range having its own sheet-iron hood is installed or not, a wire lathed and plastered hood covering a space larger than the top area of the range should depend from the ceiling to within six feet-two or three from the floor—to gather and lead to the vent flue the heat and fumes of cooking.

The kitchen sink should be set under the windows—

against an outside and preferably a sunny wall—or side-wise to an outside wall—never at the back of a kitchen lighted from one side only.

In my own practice I prefer to locate the sink against an outside wall where it may receive some direct sunshine every clear day. There is a common belief that no supply pipes for kitchens or bathrooms should be in outside walls. Hence the common practice of locating sinks elsewhere. If the plumbing is properly specified and honestly installed there need be no fear of frozen water supply pipes in or against outer walls. It is merely a question of proper furring—boxing and hair felt or other insulating covering, and a moderate degree of warmth at all times in the kitchen.

It is a very common mistake to so place the sink that it can have but one good-sized drain-board. There should be always two of them, each from three to four feet long and two feet wide—so made and set as to be easily removed at any time and not permanently fitted and attached either to the sink or wall, unless they be of enameled iron, slate, marble or "Carrara" glass.

For the average small kitchen the sink should be not less than 20x32 inches; 22x36 inches is ample in enameled iron. Enameled iron sinks should be set on wall brackets. Sinks of "vitreous ware" usually have cast iron legs which may be painted to match the woodwork or coated with bronze or aluminum paint. The water supply should be through a combination hot and cold water cock with a single $\frac{5}{8}$ -inch faucet having enough projection for hanging a tea kettle while it fills.

In the up-to-date small house, "piping hot" water—too hot for the hands—is almost always on tap, being heated from a coil in the boiler or furnace in winter, and from a small coal heater in summer with a large storage tank out of the way in the basement, instead of in the kitchen, where it occupies valuable space and tends to keep the kitchen always hot in warm weather.

In a very small kitchen, chairs are often in the way. At the same time the wise woman will sit at her kitchen work as much as she can. Therefore folding wall seats and swinging counter seats—such as are found at counters in some retail stores—can often be installed to advantage.

The refrigerator may be built into an outer wall of the kitchen or kitchen entry, cook's pantry or serving pantry—provided it is fitted with an outside door through which the ice chamber may be conveniently filled. And

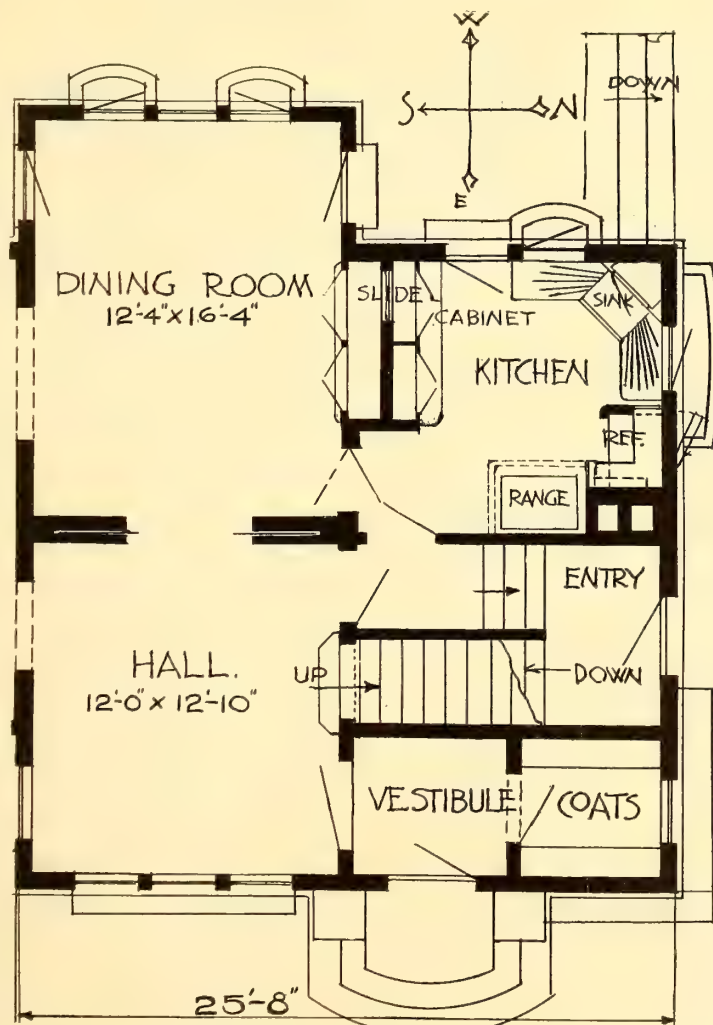


Fig. 1—The first floor plan of a \$7,000 suburban house at River Forest, Illinois, with a minimum kitchen and no pantries

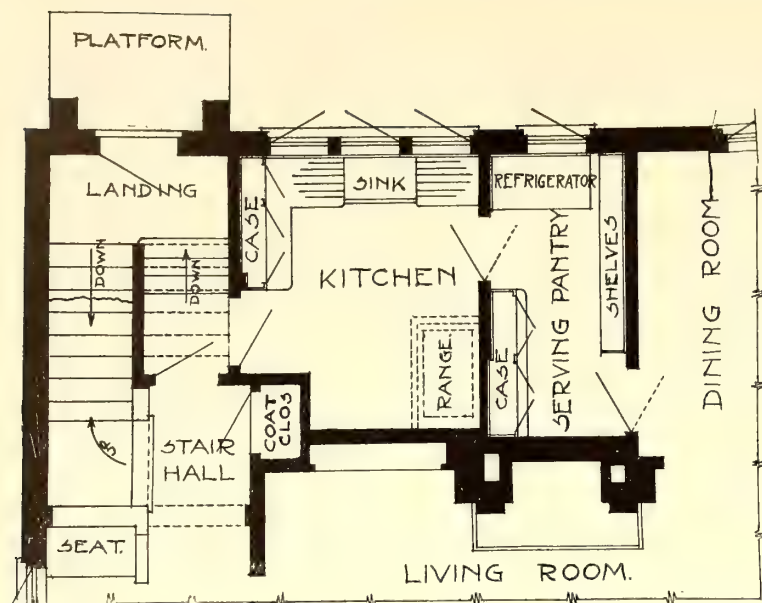


Fig. 2—Another small kitchen in a \$5,000 house, nine feet, six inches by eleven feet

the refrigerator should be a good one—as a permanent and important part of the house. The best refrigerators are scientifically designed for the economical circulation of dry cold air from the ice chamber and are lined for cleanliness with heavy enameled iron—tile glass or solid white glazed vitreous ware molded and fitted to each compartment.

The floor drain for the refrigerator should have a drip pipe arranged for flushing with hot water and discharging over an open head leading in turn to the house side of the laundry trap or to some other properly trapped waste outlet in the basement where a water seal is always assured. The refrigerator waste should never have a direct drainage connection to a sewer or even to a dry well.

It is important that the service portion of a house should have a well planned system of artificial lighting. Where electric current is available it is advisable to have but one separate gas outlet for emergencies, as combination gas and electric fixtures are comparatively clumsy. If switches are conveniently located where required, to control the several kitchen outlets, there is no necessity of wasting current through failure to extinguish lights when not in actual use.

In a small kitchen it is a good plan to have one ceiling light in the center of the room, a ceiling

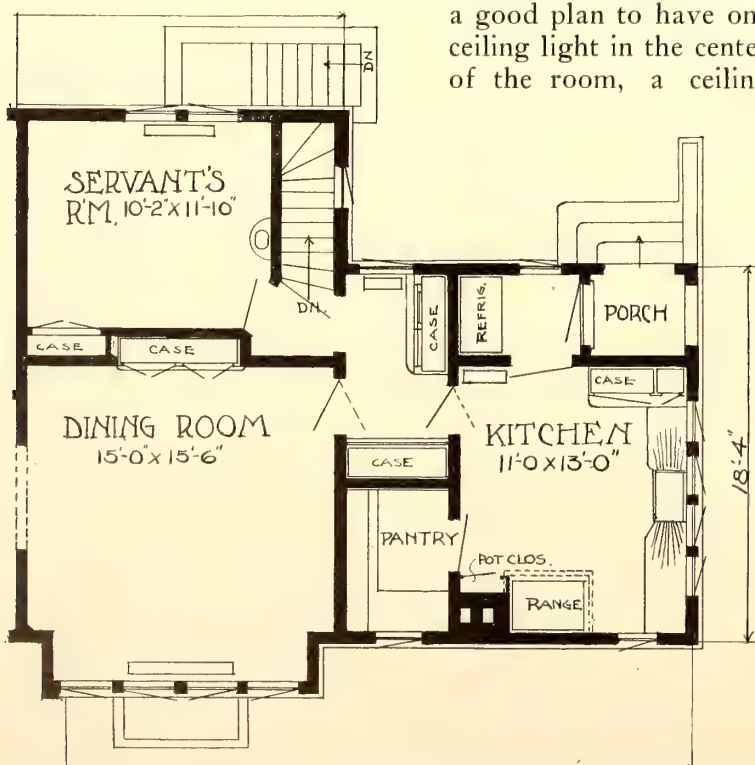


Fig. 4—The service end of a \$10,000 house is a combined sitting and bedroom for two servants

or bracket light over the sink and a lamp socket or bracket above and to the left of the range.

There are many who, while unwilling to have a door opening directly between the kitchen and dining-room, are quite willing to dispense with the cook's pantry, making a large serving pantry answer all purposes—sometimes with the refrigerator built into the outer pantry wall instead of in the kitchen or in the kitchen entry. It is undoubtedly a convenience in the serving of salads and desserts, particularly in summer, to have the refrigerator located in the serving pantry. The cook's pantry may often be treated to advantage merely as an alcove off the kitchen, where other provision is made for cold storage. Many of the operations ordinarily performed in the kitchen may be carried on to better advantage in an alcove or working pantry, at the same time reducing somewhat the necessary dimensions of the kitchen and concentrating the drawers, cupboards, etc., in one place.

In planning kitchens, a common difficulty is the number of swinging doors which seem to be necessary. The door to the kitchen pantry may often be planned to slide in a pocket, thus practically doing away with one door as far as waste of wall space is concerned either in the pantry or in the kitchen.

Nearly every woman would like to have a kitchen with tiled floor and tiled walls, but it is seldom that the appropriation for a small house is sufficient to provide these luxuries.

For the average kitchen there is no better looking, more comfortable or sanitary

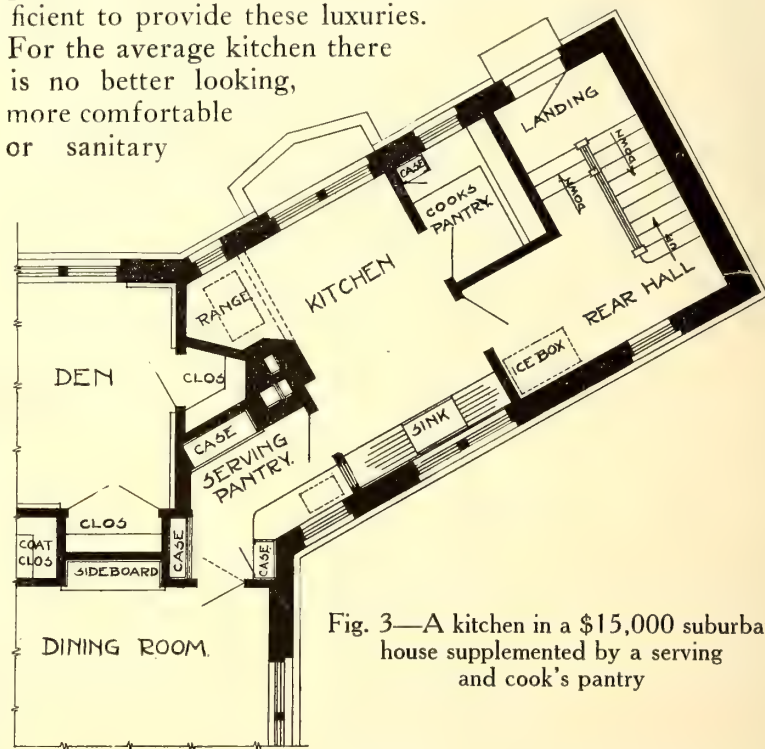


Fig. 3—A kitchen in a \$15,000 suburban house supplemented by a serving and cook's pantry

floor covering than heavy linoleum, preferably laid down in one piece before the floor connections for the plumbing have been made and before the moldings covering the joint between the baseboard and floor have been placed. A good linoleum will last and give excellent service for at least ten years. It is agreeable under foot and easily cleaned. It should always be laid on a fairly good, durable wood floor with the joints of the boards planed true and level in order that they may not show through the linoleum and cause uneven wear.

The kitchen walls should be finished in a good standard cement or patent hard plaster troweled to a smooth polished surface, then painted at least four coats with a dull gloss finish. There are a number of paints on the market specially prepared to resist heat and moisture which are particularly suitable for kitchen finish. For the woodwork, which should be as plain as possible, I prefer a similar painted finish, in ivory white. If the woodwork is sufficiently plain and devoid of moldings,

which catch the dirt, a white painted finish is not at all difficult to keep clean.

Work counters, sink drain-boards, window stools, etc., should be of mahogany, birch or white maple stained and oiled. The finishing hardware used in the kitchen, such as door knobs, butts, drawer pulls, etc., should always be of solid or stamped bronze metal. Plated steel, so commonly used through false economy, soon rusts in the kitchen and becomes unsightly.

The accompanying illustrations of typical kitchen and pantry cabinets, cases, etc., exemplify some ideas of kitchen equipment which have been found to work excellently in practice. The front of a case of drawers under a table or work counter should be recessed toward the bottom, in order to allow room for the feet when standing, a point overlooked in most kitchens and pantries.

The lower shelves above the counter of a built-in cabinet should be comparatively narrow, in order to clear the head of a person working at the counter; the upper shelves above head height may be ten or twelve inches wide.

Where proper jars and receptacles are provided for the various supplies and materials, it is more convenient if doors be dispensed with in connection with these shelves. A great convenience in the kitchen or cook's pantry cabinet is a series of three or four deep "bin-drawers" with flaring fronts just below the counter, arranged to pull out almost full length on hardwood anti-friction slides. Fitted with removable bright tin linings, these drawers make most convenient receptacles for

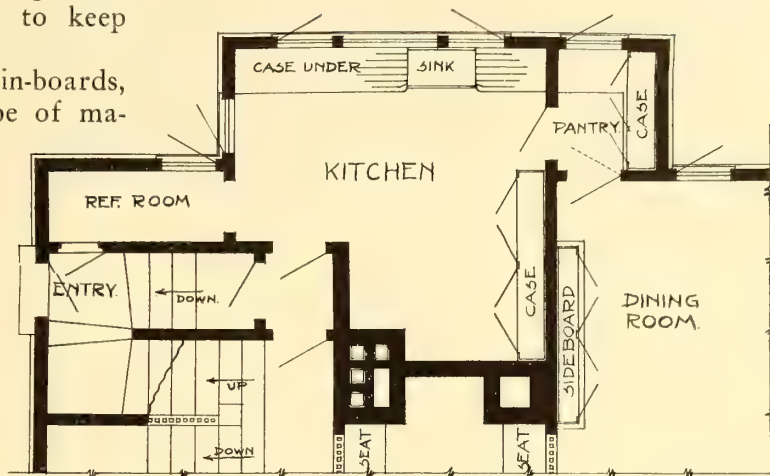


Fig. 5—A kitchen in small house with a minimum service pantry and an extra large drain board and counter

sugar, pastry flour, corn meal, oat meal, etc. In the average small suburban home, flour is nowadays seldom bought by the barrel, and can therefore be conveniently kept in a large tin flour can fitted with a rotary sifter in the bottom. A flour can of this type can be set into the shelving at a convenient height above the counter, where it is out of the way and always ready for instant use. For a very heavy can or flour barrel, a revolving platform or tilting bin may be provided under the kitchen

counter. In addition to bin-drawers and a space for flour, the remaining space under counters and also under drain boards of sinks should be utilized for drawers and cupboards. The most convenient type of sink cupboard for pots and pans is the swinging cupboard illustrated here with, which was devised by the writer because of the somewhat dark, inconvenient and unsanitary character of the ordinary pot closet. As shown, the swinging cupboard is practically a rather wide and low paneled gate strongly hinged on

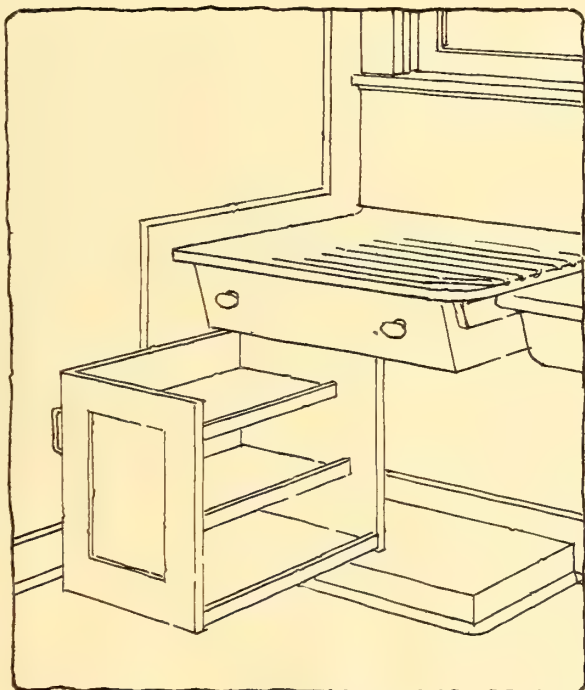


Fig. 6—Sketch showing swinging cupboard for pots and pans on a left-hand sink drain board

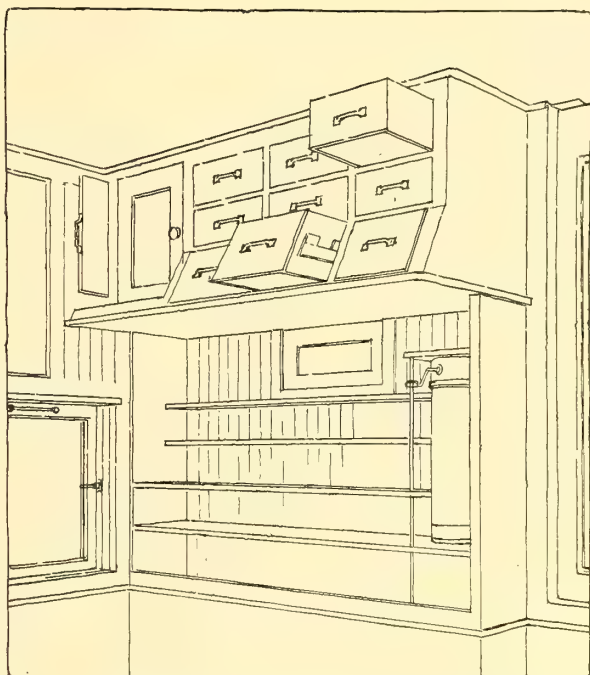


Fig. 7—Sketches of a liberally planned working case or cabinet for the pantryless kitchen

one side with several shelves on the inside, the largest at the bottom, for pots, pans and covers. By means of a large bar-pull, which serves as a handle, it may be easily swung out into the full light of the kitchen for easy access, inspection and cleaning. When closed, it is neat and simple in appearance. There is little new to be said about the equipment of a good serving and china pantry. A convenience sometimes overlooked is a suitable storage rack for tables leaves or a deep pocket for the sections of extra round table tops. As to the relative merits of swinging or sliding glazed doors for china cases, it is easier to secure fairly satisfactory results with the swinging than the sliding doors, owing to the difficulties involved in keeping the latter in permanent good working order. The floors, walls and woodwork of pantries should be covered or finished substantially as in the kitchen.

(Continued on page 200)

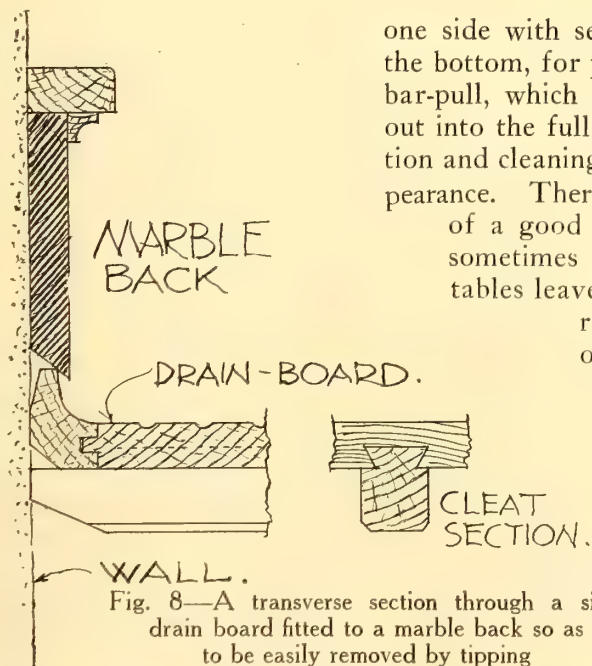


Fig. 8—A transverse section through a sink drain board fitted to a marble back so as to be easily removed by tipping upward in front

The Development of the Arts and Crafts House

By Edith Haviland



VERY adult in this generation can recall, not so many years ago, the lavish use of ornamental detail in the fittings of the house. On furniture, it was employed to conceal the defects in construction; in carpets, the designs were over-elaborate and unrestrained; wall paper patterns were aggressively prominent. Even the accessories of less importance—toilet sets for the bedrooms, holders for plants, table china, picture frames and scrap baskets—were so burdened with decoration that their utilitarian value was often lost sight of.

With the rapid growth in artistic knowledge, however, there came a reaction, in which an austere simplicity took the place of super-abundant ornamentation. At first, started by the adoption of the simple furniture made after the lines of that of the missions in California, it was modified in various ways as the manufacturers saw the idea had taken a popular hold. Sometimes a piece of furniture was designed and executed by the same hand, the artist becoming then the craftsman. In this way the mediaeval idea of arts and crafts, which William Morris tried to restore to England, came into some slight vogue in this country.

The abandonment of superficial ornament drew more attention to the constructive element, not only to the movable furnishings of the house, but to the woodwork and permanent fittings. The introduction of one article built in the more simple way achieved noticeable results. The advantages of its lack of cumberson decoration drew attention to its unworthy companions, and the latter were eliminated in favor of the more desirable style, and the assembling of several pieces of plain furniture gave such distinctive expression to a room that other furnishings related to them necessarily followed. The shaping of the woodwork and its finish received serious thought, and new stains in more subtle tones of gray, brown and green were devised to take the place of the bright varnishes.

As rugs came more and more into service, the arts and crafts house called for solid colors or conventionalized designs as a departure from the floral effects in general use. Conventional wall covers were found to be out of harmony with the furniture and floor coverings and new styles were devised. Curtains and portieres were factors not to be overlooked in making comfortable interiors, and special textures appeared from Scotland and Germany where a similar movement towards simplicity in the house was in progress.

So brief a survey of the development of the arts and

crafts movement in the homes in this country must, of necessity, leave much to the imagination, but one may see from the illustrations the real aspect of typical interiors. While the group of pictures do not all belong under one roof, there is a family resemblance apparent throughout.

In the first drawing of an entrance hall the severity of the lines of the staircase pillar is softened at the top by curved braces that seem to support the ceiling beams. The opposite side of the steps is incorporated with a built-in settle of the same general outline. Even the screen is paneled and finished like the stationary woodwork. Through the open doorway the dining table and chairs are seen to be of the same simple standard. Without a guide to the color scheme of this hall, one feels that it is practical, restful and appropriate.

On another page a reception hall is notably plain, but full of quiet charm. The back of the settle is formed of wide planks placed upright, with a seat that covers an inclosed chest. Tables for holding pottery and vases of flowers are placed at either side of the wide doorway.

The brick fireplace in another view makes the central object in a living-room, and gains dignity from being carried from the floor to the ceiling. A heavy oak slab for the mantel bears the words, "Love, Laughter, Work" in bold lettering. Two openings to hold flower jars are left in the bricks, one at either side of the chimney breast. The Navajo rugs laid in front of the hearth and in other parts of the room are an effective contribution to the color scheme. In the dining-room illustrated the furniture has been made



Curved braces support the ceiling beams

to fit the spaces, and the bedroom interior is simplicity itself.

In equipping an arts and crafts house one may not make an exact copy of what has been chosen for some other dwelling, similar in character, for the variations in family life would render this undesirable. Each feature of the home requires a careful study to bring it into that fitness of expression that is the mission of the arts and crafts.

In selecting the window shades the exterior finish of the window casements deserves attention, although the inner effect is unquestionably of moment. If the woodwork is finished in any one of the tones of brown that is usually adopted in an arts and crafts house, a buff colored shade will be satisfactory.

In the frequent discussions which one hears as to the relative advantages of carpets and rugs, the point that appeals most keenly to the home maker in favor of the latter is that the annual or semi-annual tearing up for cleaning

is obviated. As hard wood floors are a part of the building scheme of the modern house, the rug question becomes of importance.

While the choice must turn on the amount that can be expended, there is still a variety at almost the same price. The Scotch rugs made of wool with vegetable dyes and the all-wool rugs in plain colors made in New York State cost three dollars a square yard. Hemp rugs made in India are unique in design and of good wearing qualities. The Navajo blankets have a peculiar interest for the arts and crafts lover as they are designed and woven by the same person, the symbols, sacred and otherwise, telling some event or history.

In the bedrooms one may use the cotton rugs that are



Navajo rugs contribute charm

the thick homespun is also available.

The skill of an artist might well be expended on the choice of pillow covers for a divan, to do away with the mistakes so often seen in assembling garish colors, clumsy fabrics, and discordant designs.

As the windows of an arts and crafts house are exempt from the conventional treatment of lace draperies, a thin net may be bought by the yard from twenty cents a yard upwards and hung only to the sill. A heavier curtain

may be put up for the cold months of the year and drawn together in the evening. For a room that is well lighted a figured madras may be hung across the glass, or the new unfadable fabrics may be used to give color in a sheer material.



Dining-room in fumed oak



A hallway settle

woven in the old way on hand looms. The mixed colorings cost seventy-five cents a yard, and the special colors and designs from one dollar to three or four dollars a yard. Until the last few years a wide rug was made by sewing together the necessary yard-wide strips; but a nine by twelve rug is now woven in one piece.

In considering the color of the finish for the furniture it is well to remember that the nearer it comes to the finish of the woodwork the more harmonious will be the interior effect. For the coverings of the chairs it is well sometimes to avoid the heavy leathers, especially in a winter home, and substitute the new designs in tapestry in small, set figures of three or four colors. For tufted cushions for seats or chairs there is nothing better than corduroy at a dollar and a quarter a yard. At the same price

A plain colored wall may be made by tinting the plaster, or by using a plain paper. A rough-finish for the former gives a more pleasing effect than the smooth plaster that is preferable for the paper. Among the higher-priced wall coverings, burlap, crash, buckram and grass cloth are still the standard selections for the arts and crafts home. If a wall-paper with some accent or design is desirable, instead of a plain surface, the imitations of various textures will give satisfaction. As a background, too, these papers are worth considering, for their coloring is generally subdued and the figuring almost imperceptible.

With the elimination of distracting patterns on the walls there is an opportunity for enjoying the beautiful colored prints that are sent over from Germany, or the prints made in this country from the architectural paintings of Jules Guerin.



A simple bedroom



Decorations and Furnishings for the Home

By Alice M. Kellogg

III.—The Combination of Wall Papers and Window Curtains



THE successful selection of a wall-paper does not meet all of the decorative requirements of a room. Window hangings are so closely allied to the wall coverings that a consideration of one must necessarily include the other, and a happy combination determines the general attractability of an interior. Even with the restrictive conditions of the kitchen and bathroom there are opportunities for bringing the walls and windows into unity. At present the largest variety of materials on the market for collective use at windows and on walls is designed for the bedrooms.

The illustration at the top of this page shows a section of a six-inch border to be applied over a striped paper. The ribbons are printed in blue, pink or yellow with tiny white flowers and green leaves, and the cost by the yard is twenty-five cents. If one wishes to cut out the upper and lower edges of the border it looks a little better when pasted against the background. As a complement to this wall decoration there is a pretty cretonne, "Ribbons and Roses," at forty-five cents a yard.

Duplicate designs for both wall-paper and curtains have been for some time in vogue, but this is a combination for the advocate of harmonious surroundings to avoid. (The material, however, is helpful in covering tables, beds and furniture.) The space that is constantly in eye range de-

mands relief from too much pattern, and a nice balancing of the parts will give a figured drapery with a plain wall, or a curtain with unaggressive pattern to companion a decorative wall covering. Following this principle, the manufacturers have produced curtain materials to match the border of the paper (see illustration) not only in cotton but in linen and silk goods.

The union of a set pattern with a naturalistic one is always interesting when the motive is the same in each, as in the apple blossom paper and the flowered chintz. A lattice background may take the place of a plain effect, either in paper or fabric, and, for further variation, there are fine stripes or tiny, all-over designs that are almost as simple as the plain surface.

Glazed chintz is not used as much in this country as in England. A novel use was made for it in an old-fashioned country home on Long Island by attaching it to the rollers of the window shades in place of the white Holland. White muslin curtains were tied back at the sill and a two-toned paper was chosen for the walls.

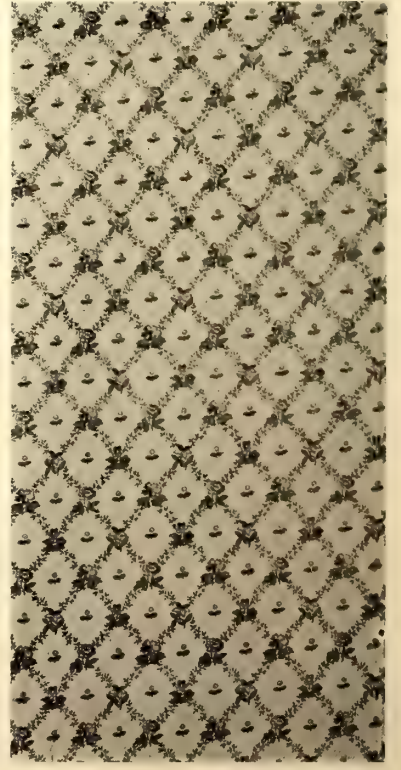
Cretonnes have reached such perfection that they can appear in other than the sleeping-rooms. The "Peacock Chintz" illustrated took the grand prize at the Paris Exposition. Its rich coloring and distinctive pattern requires an equally handsome wall covering in plain grass cloth, Japanese leather paper or silk fiber paper. As this same



Border to match cretonne



A peacock chintz



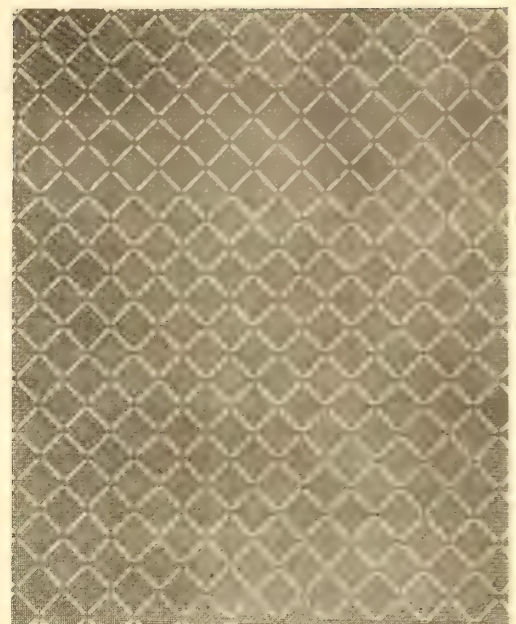
Cretonne to match border



A flowered chintz



An apple-blossom paper



A background for decorative curtains

design is made in wall-paper, the use may be reversed, decorating the walls and hanging the windows with silk tapestry, shaded velvet or corded silk.

For any part of the summer cottage there is nothing as satisfactory as a curtain that may be laundered at the end of the season, and with the innumerable variety in cretonne, chintz and linen costing from twenty-five cents to two dollars a yard, one can meet every condition in color, design, quality and price. Taffeta, jaspé, chintz and linen, with the pattern printed by hand, may be beyond the average income, but an inexpensive wall-paper may help to balance the appropriation for windows and walls.

In the trimming of a curtain, as described last month in this department, an individual touch may be given with a cut-out border applied to a plain material. This suggests the use of a border on the wall-paper, which should follow the curtain in general effect.

As the stencilling of window curtains can be done by an amateur with a little practice, it affords many opportunities for the expression of original ideas in harmony with the decoration of the wall. For instance, a wall-paper with an allover design may have some portion of it made into a border for the curtains. Or, with a plain paper the color may be repeated at the windows. In curtain materials there are many new weaves especially adapted for stencilling, and

some are sun-fast colors that may be exposed to the sunlight without deterioration.

For a room that is not well lighted the right combination of curtains and wall-paper will produce almost the effect of sunlight. Sometimes a room in a city apartment opens into a court where the rays of the sun never enter, and with a dark wall-paper and heavy draperies the room is as gloomy as a cell. In such conditions an experienced decorator made the following scheme: The ceiling was tinted a cream white and carried down on the side wall eighteen inches. The rest of the wall was covered with a plain orange-colored paper. Across the glass, as it was imperative to have some kind of screen, a thin cream-white net embroidered with yellow flowers was draped; and at the sides of the case-ment some straight lengths of figured silk in orange, yellow and mahogany were hung.

At the opposite extreme one may imagine a room over-lighted from, perhaps, three different exposures and super-abundant window glass. Here one may apply a gray-brown paper in a two-toned effect with curtains of blue, green and gold; or, a foliage tapestry paper may have long curtains of blue linen or velvet to diminish the glare of light.

A bathroom does not suggest much opportunity for aesthetic decorations, but a little thought bestowed on the treatment of the walls and window will be more than re-



A ribbon design



Hand-printed linen



A nursery pink

warded. An oil-painted frieze above a tiled wainscot is the most durable finish for the wall, with the former embellished with a stencilled border. If a paper is to be adopted, instead of the paint, the new sanitary wall material printed in small flower patterns in one color is more attractive than enamelled tiles or bricks. Whatever color is to appear on the wall may then be repeated at the window curtain. Blue is usually the favorite color for the bathroom, unless some other is predominant in the room from which it opens.

Bathroom muslins either printed or embroidered may be had in small patterns in blue and white, and these may be finished at the sides and bottom with a blue and white cotton braid or edge. Or, if only one length is sufficient to hang at the window, the two sides and bottom may be trimmed in panel fashion.

The color of a kitchen wall will often spoil the most perfect equipment. A green or blue is chosen without reference to its appearance by artificial light, when it turns out to be gloomy and dark. To prevent mistakes an ivory color or light buff is the safest choice. As the windows must be lowered from the top for ventilation, a double shade hung at the center to raise from the bottom and lower from the top is the best expedient. Or, an ordinary shade may be fastened at the top of the casement with a muslin curtain across the lower sash. Of what can this short curtain be made to add a touch of color to this room? A washable material is undoubtedly necessary, and one need not search

far among the summer dress goods to find a blue and white dimity that is deep enough in color to withstand a little fading by washing and exposure to the sun.

Servants' bedrooms to be strictly sanitary should have the walls treated with oil paint, and to contribute to the good taste of the home the color should be carefully studied with reference to the day exposure and the effect by artificial light. A light yellow or soft shrimp suits a north or east outlook; a pale green or turquoise blue is best for a very sunny outlook. If a wall-paper is the choice the groundwork should not be too heavily covered, but yet be serviceable, the pattern interesting but not oppressive.

Seemingly a minor item in fitting up a home is the clothing of the hall windows, yet, in connection with the covering of the wall it exacts due attention. In the ordinary long hall in which side lights are placed at either side of the front door it is well to use a fine net shirred on a rod at the top and at the bottom—cream white if the woodwork is painted white, and ecru if the woodwork is a natural or dark finish. If a glass is set into the door the same material is repeated with a silk curtain to draw as a screen at night. Here, again, the law of contrast is to be remembered with a plain fabric if the wall is figured, and *vice versa*.

In a reception- or living-hall a less simple plan must be followed to suit the conditions, and as this is the entrance to a home the impression will be according to the skill with which the walls and curtains are brought together.

The Small Kitchen of To-day; Its Planning and Equipment

Continued from page 195

DESCRIPTIVE TEXT OF ILLUSTRATIONS

Fig. 1. First floor plan of a \$7,000 suburban house at River Forest, Ill., with a minimum kitchen and no pantries. The plan shows the proportion of kitchen to other space. Its extreme inside dimensions are 10 feet 8 inches by 12 feet. Between dresser and sink, 7 feet; between range and sink, 6 feet 10 inches. The long sideboard and china case in the dining-room takes care of the china usually kept in a serving pantry. Below the counter of the china case are six drawers and two cupboards. The cabinet or kitchen case on the opposite side of the partition is 6 feet 6 inches in length, and serves the purpose of kitchen pantry, work table and dresser.

The unusual diagonal setting of the sink saves space, and is very convenient in practice, the corner space above it being occupied by a cupboard above a high counter shelf for soap, washing powder, towels, etc. The enclosure for the "built-in" refrigerator has a broad hard-wood top, above which is a case with several shelves, so that practically all the wall space is utilized for shelving. The gas range is covered by a plastered hood with a ventilating register into one of the chimney flues. The refrigerator has an outside icing and ventilating door, and, notwithstanding its location near the range, no more ice is apparently consumed than under average conditions.

Fig. 2. Another small kitchen in a \$5,000 suburban house. Inside dimensions 9 feet 6 inches by 11 feet. A large pantry contains ample shelf and counter space, together with the refrigerator, which is iced from outside. The left-hand drain-board of the sink unites with a wide work-counter below a case of shelves 5 feet 4 inches long.

Fig. 3. A kitchen in a \$15,000 suburban house, supplemented by serving and cook's pantries. Refrigerator is in the large rear hall, convenient to door from kitchen. The alcove arrangement for the range with its own window and hood in the form of a deep plastered beam, leaves the re-

mainder of the kitchen conveniently unobstructed.

Fig. 4. The service end of a \$10,000 house, with combined sitting and bedroom for two servants off the serving pantry.

Fig. 5. A kitchen in a small house with minimum serving or "pass" pantry, extra large drain-board and counter at left of sink, and all pantry conveniences in the kitchen. A small cooling room is provided for the refrigerator, with icing door in the entry.

Fig. 6. Sketch showing swinging cupboard for pots and pans under left-hand sink drain-board, swung open for easy access and inspection. The shelves should decrease in width toward the top, and the edges should be raised to prevent contents from slipping off. The shallow shelf space on top is for covers and smaller articles. A slightly raised platform under the cupboard facilitates keeping the floor clean.

Fig. 7. Sketches of a liberally planned working case or cabinet for the "pantryless kitchen." The shelf supporting the sifting flour can is hung by a flat steel bar from the top of the case. The three upper drawers are "bin-drawers" with extension slides. Next to the cupboard at the right is a pocket with rollers at the bottom, to receive the bread-board when not in use. A slide connects the counter of the sideboard on the opposite side of the partition. Note that the two lower shelves are comparatively narrow, in order to allow the free use of the counter as a work table. Note also the slanting drawer fronts.

Fig. 8. Transverse and partial longitudinal sections through a sink drain-board of mahogany, fitted to a marble back so as to be easily removable by tipping upward in front and drawing forward, at the same time providing a good tight drip and splash connection between marble back and drain-board.

All the accompanying illustrations are from actual buildings, with which the owners appear to be well satisfied according to their various needs.



Fig. 1—First floor plan



Fig. 2—The entrance porch to Mr. Baxter's house

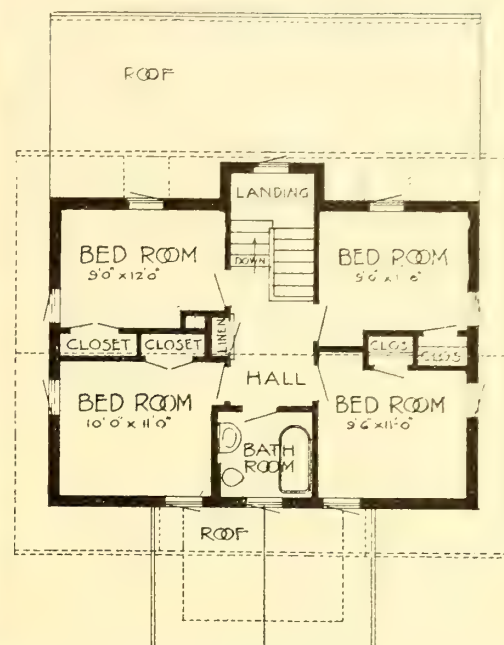


Fig. 3—Second floor plan

The Use of Cement in the Building of the Suburban House and Garage

By Robert W. Gardner



THE illustrations inserted in the text of this article are sufficient to demonstrate that, the use of cement does not hamper the architects in the exercise of good taste nor discourage regard for the picturesque.

Cement stucco has been used for so many generations to protect stone and brick buildings that its usefulness needs not now be a matter

for discussion. Only recently has it been used on frame buildings, as a stucco, and it seems worth while to consider the forms best suited to withstand our climate.

Bearing in mind that the destructive forces working against cement plaster are sun and frost in the presence of moisture and that moisture usually travels by capillary attraction, we must consider how to mix and apply cement so as to prevent capillarity. If a frame building is to be



Fig. 4—A house built of reinforced concrete throughout

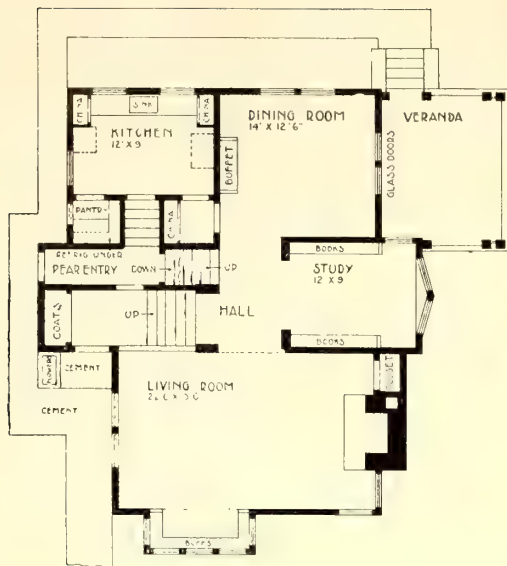


Fig. 5—First floor plan



Fig. 6—The main entrance is built at the side of the house facing the street

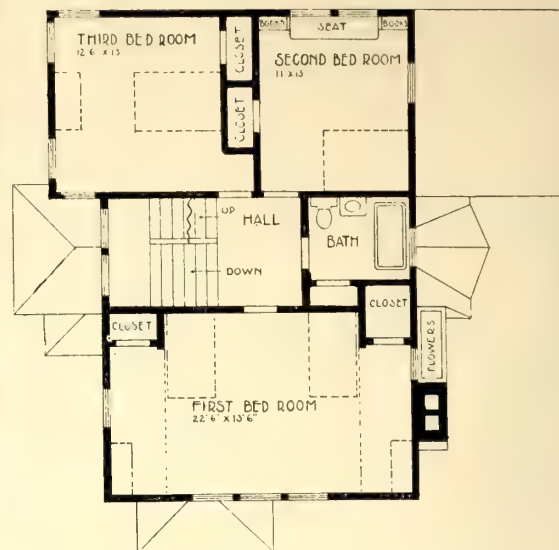


Fig. 7—Second floor plan

plastered, we will take for granted that it is built in the strongest manner possible, well braced, heavily timbered and tightly weather boarded and as a final preparation for lathing, covered with heavy waterproof building felt, and all openings flashed with copper. Strips of wood are nailed over the paper, and metal lath (the galvanized wire mesh is the best) fastened to the strips. This allows the mortar to surround the mesh and protect it from rust.

The first coat of mortar, the scratch coat so called, is mixed with Portland cement, sand, and a little lime. In applying it each trowelful should be put on with just *one*

upward sweep of the implement and left absolutely untouched, to set hard. If portions drop off, the patching may be done later.

In common practice the next or browning coat follows before the first coat is dry. At this stage most of the damage which later appears in cracked and blistered walls is done by the plasterer with his trowel. An exacting public taste is supposed by the plasterer to demand absolute geometrical planes and angles and the trowel travels in sweeps to and fro, to attain that perfection. Each sweep forms minute capillary cracks underneath the surface and



Fig. 8—The chimney is the artistic feature of this stucco house

the final sweep glosses over the surface and closes only the tops of the fissures.

We have pretty well saturated our building with moisture by this time in spite of the building paper. The wood-work will swell and later shrink. The sun will open the little hidden fissures, moisture will travel in; later it may freeze and we have a damaged wall. It would be well to wait a year and let most of this inevitable cracking and settling take place. The cracks can then be cut out and filled with cement and a final finishing coat applied.

There is only one cement finish that really withstands the weather. That is the old-fashioned splash dash coat.

The materials are pure cement, preferably a white or non-staining variety, mixed with water to form a paste, and stirred into this, clean small grit or pebbles the size of buckwheat. This is splashed onto the wall with a blunt paddle and left as it falls. If a spot is left bare here and there by a slide, it can be covered later. Cement without sand has no capillary voids. Water will not travel from the wet to the

thing that a trained plasterer has in mind is the appearance of the surface, and tons of cement and many dollars' worth of wages are being wasted by his misguided efforts.

This narrows the cement building to apparently one finish and does not offer an alluring variety that aims to please every taste. This may not be a vital matter, because the beauty and variety of cement surfaces are in its simple masses and proportions, in its value as a contrast to foliage and flowers and in its play of lights and shadows from overhanging trees.

The soffits of overhanging eaves may be painted in the most brilliant colors, yet by reason of intercepting rafters be only evident to the eye by the reflected lights on the wall below.

The reflections from a brick pavement or red tiled balcony floor will tinge a whole wall. It seems hardly worth while to worry over much about the ultimate texture of a building or even over fine points in its color so long as it is a natural color and thoroughly characteristic of a good ma-



Fig. 9—The windows and doors of the living-room are built on a line with each other

dry spaces and leave a stain. Such trifling incidents as the workmen stopping to shift the scaffold or for luncheon are not commemorated everlastingly by unsightly streaks and stains on the wall.

Pure cement when it dries is checked with minute hair cracks. The pebbles tend to prevent this, but as the cracks are merely superficial, a coat of cement wash put on with a brush will fill them.

This slap dash method has been used for centuries in England and Scotland on masonry buildings. It will shed water and stand hard usage. It will stick to glass or brick or glazed tile. It is the only practical application for solid concrete walls. No mechanical key is required. When it lands on a surface it drives out the air film and is held by suction until it sets. It is the only kind of cement stucco that is really essential and you will observe that the plasterer with his trowel plays no part in its application. It is better to keep the plasterer entirely away from any outdoor job and employ a good stone mason to do the work. The only

terial. Time will then bring it into the scheme of things.

The illustration (Fig. 14) of the garage, by Charles A. Platt, Architect, shows in the basement of the dwelling one solution of a very modern problem. The dignified entrance gate frames a vista of gable end and distance. We cannot seriously find fault if the owner prefers an entrance for his motor in the foreground to a bed of hardy perennials. The cellar wall of this building is of solid concrete.

The hint of the forms or board marks still showing on the wall are not unpleasant to the eye. The surfaces are picked with a chisel or brush hammer instead of being plastered. When a concrete wall is well made there is no better method of finishing the surface than that of brush hammering or picking with a sharp-pointed chisel. A variety of color tones may be obtained by the selection of the stone used in the mixing of the concrete. The tool removes the surface mortar and reveals the color of the freshly broken stone.

The illustrations shown in Fig. 8 of a house built for Mr.

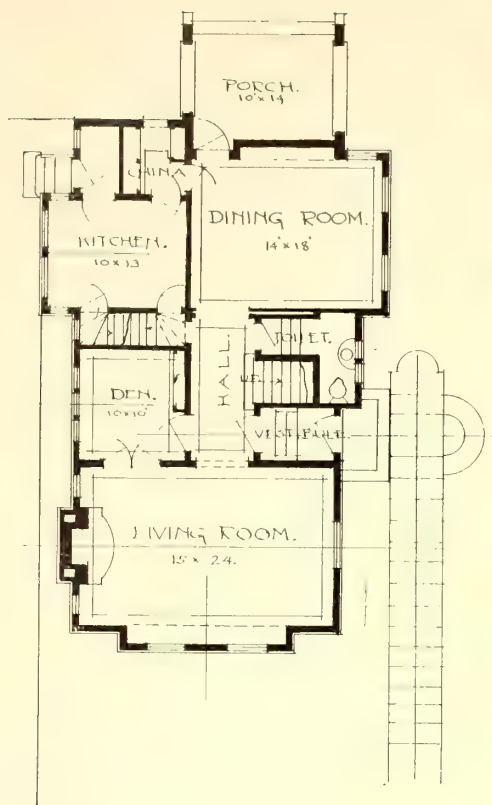


Fig. 10—First floor plan



Fig. 11—A hooded entrance way built at side of the house



Fig. 12—Second floor plan

Ridge, Ill., from plans prepared by Robert S. Spencer, Jr., architect, of Chicago, Ill., was constructed of hollow tile walls with the same

Rockwood at Oak Park, Ill., and the one presented in Fig. 13, of a house built for W. W. Kerr, are excellent examples of splash dash on well-designed frame construction. The house shown in Fig. 4 and built for Mr. A. Baxter, at Park

stucco finish. The floors of the last building are fireproof. Comparing the floor plans of this with those of the frame structure, it is interesting to note the sobering and wholesome effect upon the plan that the use of the more sub-



Fig. 13—A stucco house with its living-room built toward the street

stantial material has encouraged and almost compelled.

This building, Fig. 4, has fireproof floors and roof, and was erected at a cost nearly as low as that of a frame building. It is probable that the assiduous care and thought of the designers and the owner made this possible. The entrance porch of Mr. Baxter's house, Fig. 2, is an interesting one which is enclosed in winter with glass and forms a vestibule for the house. The arrangement of the rooms is most simple and convenient. There is a large living-room from which the stairs to the second floor rise, a dining-room and a kitchen fitted with all the best improvements. There are four good-sized bedrooms and a bathroom on the second floor. The cost of this house was \$3,500.

The house of Mr. Rockwood, at Oak Park, Ill., cost \$4,800 and was built from plans prepared by Charles E. White, architect, of the same place, is planned with its entrance at the side of the house facing the street. By this arrangement the entire front of the house is given over to the living-room without using any of the space for a hall at the front of the house, which is usually the case. The main floor of the house contains a living-room, a den, a dining-room and a kitchen. There are three bedrooms and a bathroom on the second floor and servant quarters and a trunkroom in the attic. The interior is trimmed throughout with cypress treated in a Flemish brown. The living-room has a brick fireplace with facings extending up to the ceiling.

The house shown in Fig. 13 and built for W. W. Kerr at Wilmette, Ill., from plans of Arthur G. Brown, architect, of Chicago, is a happy combination of stucco and shingles. This is another house with its entrance built at the side of the structure so as to give a greater space to the living-room, which is built at the front. This living-room has an open fireplace built of Klinker brick. The den adjoining is provided with bookcases built in at one side of the room. The dining-room and kitchen are conveniently arranged and the living-porch is built at the rear of the dining-room so as to be used for dining uses when desired. The second floor contains five bedrooms and a bathroom, all finished in a most artistic manner.

The four garages shown in Figs. 14, 15, 16 and 17 present a characteristic treatment of cement. The garage,

Fig. 14, built for Mr. H. Howard, at Brookline, Mass., from the designs of Mr. Charles A. Platt, and already referred to, is in a combination with the plan of the main house. The motor car in this instance is rolled into the garage from which a lounging-room in the basement is reached. This affords a place to enter in cold or unpleasant weather and also forms a means of reaching the upper floors of the house with perfect ease and comfort.

The garage shown in Fig. 15 was built for Mrs. E. L. Martin at Oak Park, Ill., and from plans of Frank Lloyd Wright, architect, of the same place. This building is treated in an unusual and most effective manner. Living-rooms for the chauffeur are provided in the second story of the building.

The garage built for Mr. Hartford at Deal, N. J., and shown in Fig. 16, is built of solid concrete, and is the work of Mr. A. H. Dodge, architect, of New York.

Another garage at Brookline, Mass., is the one shown in Fig. 17, which was built for W. H. Conant, and from designs prepared by Charles E. Barnes, architect, of South Framingham, Mass.

The problem of housing a motor car has set many a man to thinking of the shortcomings of wood. Most of us have been brought up in fire traps, and the average man is willing to take a chance for himself and for his family. But a new car with the tank full of gasoline suggests to him a different treatment. The use of cement occurs to him as a natural and easy solution of the problem and when once a man has heard of a fire-

proof material and been introduced to the many incidental good qualities, he will rarely care to build of anything less permanent.

We have been considering so far, the use of cement in walls; yet that material is destined to make its most profound impressions on building methods in its combination with light steel rods and perhaps with hollow tile to form light fireproof floors to take the place of wooden joists. The reinforced concrete floor can be put in any masonry building. There are no patents that one need infringe.

The architects should quickly become familiar with this designing and any builder can erect them. In a few years it will be only the cheapest and most flimsy building that will use wooden joists at all. It means safety from fire,



Fig. 14—A garage built in the basement of a house forms an economical place for a motor car

freedom from plaster cracks and ruined decorations. It means that woodwork of trim and doors once fitted will always remain. It means a house without mice or rats or vermin of any kind, and a house that can be ventilated and heated in a scientific way, not by haphazard. It means sanitary housing, durable and in the end, economical construction.

The men of moderate means will receive the benefit of this as soon as they insist that architects and builders furnish them with something better than the modern frame building, and as soon as they are ready to sacrifice a lot of useless lumber space and useless rooms and partitions that are now commonly put in houses. The architect will sacrifice a lot of useless ornaments and the old-established builder some nights' sleep until he learns this branch of his business. It is the established builders who are needed to make a success of what is merely a detail, but an important one, of their general practice.

Those who are looking for a cheap substitute for wood will not find it in concrete. But those who want durability, freedom from repairs and deterioration, who wish to build and then

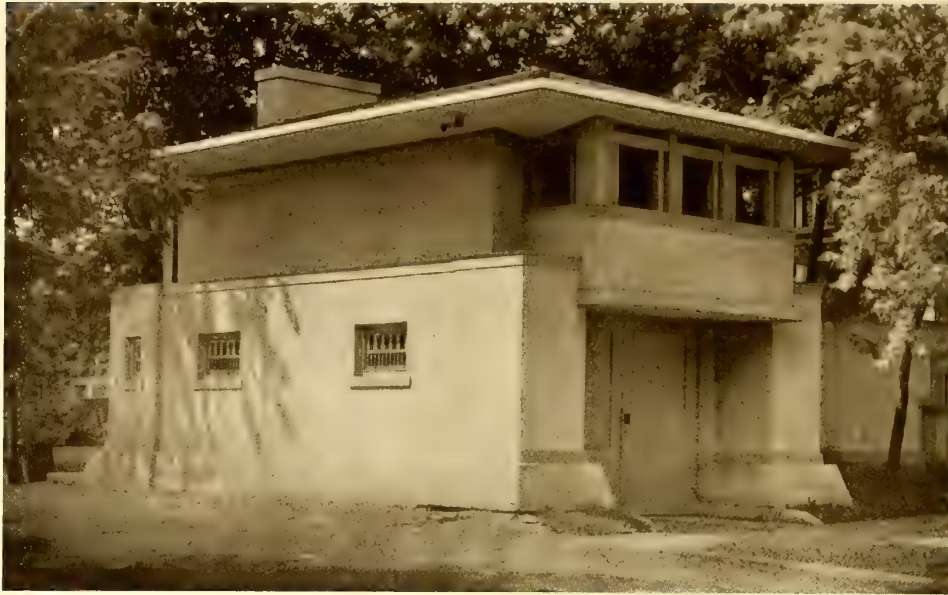


Fig. 15—A stucco garage of unique design



Fig. 16—A concrete garage with the chauffeur's room in the second story



Fig. 17—A garage of good design with cement walls and a slate roof

turn their minds to something else, will build their walls of brick or terra-cotta or concrete, and their floors of reinforced concrete finished with oak or pine or tile. They will diminish the size of their buildings and curtail the number of rooms rather than accept a material whose incessant repairs will forever curtail their activities in other directions.

The temptation to both architect and layman is to cover as much space as possible with the appropriation at hand. Undoubtedly the greater showing in size and display can be made in frame than in tile or concrete construction for the same amount of money, especially in the class of dwellings that average in cost under fifteen thousand dollars.

Where an expenditure of twenty thousand dollars is intended, there are advantages available in the fireproof structure that make it to-day a close competitor to the frame structure in first cost, although exuberance in the trim work, both interior and exterior, must be repressed in the former more than in the latter.

This is hardly a misfortune, as the illustrations accompanying this article abundantly show the trend toward simplicity in design.



GARDEN NOTES

CONDUCTED BY CHARLES DOWNING LAY



LAWN MAKING PREPARING THE SOIL



HE proper size for a lawn should be determined by each one for himself, gaging it by the amount which he is able to spend comfortably for the best possible preparation and first-class maintenance.

Nothing is more vulgar or ostentatious than a lawn too large for the place, and nothing is more distressing than a seedy-looking lawn. No place, however small, should be all lawn and with a flower bed in the middle!

The area of carefully tended turf should be in proportion to the size of the house, as well as in proportion to the owner's pocket book, and the rest of the place should be kept as pasture, meadow, or wood lot.

The greatest beauty of a lawn comes from its neatness and cultivation in contrast with the rougher and more natural looking pastures and meadows, and its harmony with the refinement and beauty of detail of the house.

Nothing is more important for the success of the lawn than careful preparation of the soil, for on that depends the growth and luxuriance of the grass and the smoothness of the turf. No turf can be thick and close on poor soil, and the richer the soil the better the lawn will be. Cutting down the cost when making a lawn is foolish economy, because a lawn once laid down should never be dug up. It is a permanent job and should be well done at the beginning.

The ground should first be cleared of stones, brush, tree stumps and then deeply ploughed, but spading the ground over by hand is better than ploughing because the spading can be done more thoroughly.

Trenching, as it is called, is the best possible preparation for a lawn. This means digging a trench at one side of the space to be prepared, then digging out the earth adjoining the trench and filling the first trench with the earth taken from the second and so on across the lawn. It is an expensive operation. The depth to go in trenching depends on the quality and depth of the soil. If it is a deep rich soil one could go 18 to 24 inches deep, but if the top soil is thin and the subsoil poor, one spade length may be enough. Trenching turns the soil over, putting the old sods at the bottom to rot and brings the old bottom layers to the top, and it would be poor policy to dig up hard pan to put on top of the good soil. So in shallow soils underlaid by a poor hard pan, ploughing might be better than deep trenching, and in this case the subsoil could be stirred up by a subsoil plough without bringing it to the top.

In this spading or trenching all large stones and roots should be taken out and the manure or fertilizer worked in.

If the area is too large for spading then deep ploughing should be done and in this case it would be well to start early in the spring, turn the old sods over and sow clover, cow pease, or some other nitrogen-gathering crop which could be ploughed in August and the whole seeded with blue grass before September. Seeding done after the first of September is seldom successful; if it cannot be done be-

fore that it would be better to delay it until the following spring.

After spading or ploughing, the lawn should be graded, raked and seeded.

If the grading changes the contour of the land very much it may be necessary to strip the top soil, that is take it all off and pile at one side, exposing the subsoil which can then be graded as may be necessary. The top soil is then put back on top, where it should be. Top soil is ordinarily too valuable to bury.

The amount of manure to put on is a difficult question. On a large area it is always hard to get enough and I have never seen a lawn too heavily manured. Twenty to thirty cartloads per acre is a fair amount which could be doubled without doing any harm.

Chemical fertilizers, which are needed on some soils rich in humus, must be used more cautiously.

Two hundred pounds of superphosphate of lime, and one hundred pounds of Peruvian Guano per acre may be used together, but if one is used alone the quantity might be much greater. Five hundred pounds of ground bone, five hundred pounds of ashes, one-half ton agricultural lime, one hundred pounds of nitrate of soda, per acre is the proper quantity.

All these should be spread on top of the ground and harrowed in.

Every autumn the lawn should have a good dressing of barnyard manure, and with that ground bone or hard wood ashes.

In the spring nitrate of soda and the phosphates may be applied.

Kentucky Blue Grass, Rhode Island Bent, and Red Top are the best lawn grasses. A pure turf is much better than a turf of mixed grasses, but English Rye Grass can be sown with Kentucky Blue Grass for a quick result. Clover in a lawn is a matter of taste; get the purest seed you can and sow it generously.

Two to four bushels of seed per acre is the usual amount, but on a tennis court it would be better to sow a bushel of seed. The seed should be sown on a calm day and the sower should go over the ground twice, in opposite directions. It will be done, of course, as soon as the ground is fit to work in the spring, or if the ground was prepared in the autumn the seed can be scattered evenly on the last snow in March, or it may be sown when the ground is frozen but has been thawed by the sun a little, and is wet and muddy on top. This is a cheap way, as raking will be unnecessary. After sowing in the spring a light raking should be given. Large areas may be gone over with the brush-harrow.

After raking or brushing, the land should be rolled twice, cross wise.

When the young grass is high enough it should be topped with a scythe, and after that it should be mowed often with the mower, so often that the clippings need not be removed. Weeding must be done constantly.

Sodding on a large scale is too expensive to be considered, but it may be done on a small terrace if good sod can be bought, but good sod is hard to buy and poor sod is too

full of weeds to make a good lawn. Seeding will always give better results.

There is a way of sodding with small pieces of turf, two inches square, planted eight to ten inches apart, called the inoculation method. The grass spreads under ground from the small squares until the whole area is covered. This takes some time and much care and labor in weeding, but it produces a lawn of absolutely pure turf.

Crab grass is a great pest, as it grows in warm weather, appearing in the lawn in August. The only thing that can be done with it is to rake it out, enrich the spots and sow more seed in the hope of encouraging the good grass to crowd it out.

On a large place there should be a reserve lawn from which sods can be cut out through the summer to repair

worn places in the lawn or tennis court. This reserve plot should be re-seeded every year or as may be necessary with the same kind of seed that was used on the lawn.

Old lawns are often full of moneywort, cinque foils, moss and other things and it is often a question whether to dig the whole place up and re-seed it or to let it alone. Such things are not bad in themselves and are well enough in a little used part of the place. Raking and heavy fertilizing will often do wonders in such a spot.

Dandelions, plantains, docks and mulleins are easy to dig up, but must be cut off well below the ground.

Any lawn which is used for games should be free from all weeds and should be constantly rolled and mowed.

All lawns should be well rolled every spring as soon as the frost is out of the ground.

Planning the Small Garden

By Loring Underwood



THE enthusiasm for simple, dignified and natural things, that country life gives so bountifully, has become contagious and many owners of suburban homes appreciate the enjoyment to be derived from grounds that are laid out with the idea of comfort and seclusion, rather than

with the notion that the grounds about the house should

This plea has long been urged by professional lovers of art, but until recently it has had to contend with the prevailing fashion of obtrusive and monotonous display of undignified lawns, walks and flower beds.

The time was when the dweller in a suburban town would as soon think of wearing his coat wrong side foremost as of living in a house that was situated on its lot other than with the front to the street. It mattered little whether the house faced the south, north, east or west, or whether the street was noisy, dusty or hideous to look at, the best rooms must face the street where all who pass might see the most attractive side of the house

at a glance, and be seen in turn by those within. When we recall the countless number of such small suburban places, of less than an acre in extent, that are arranged side by

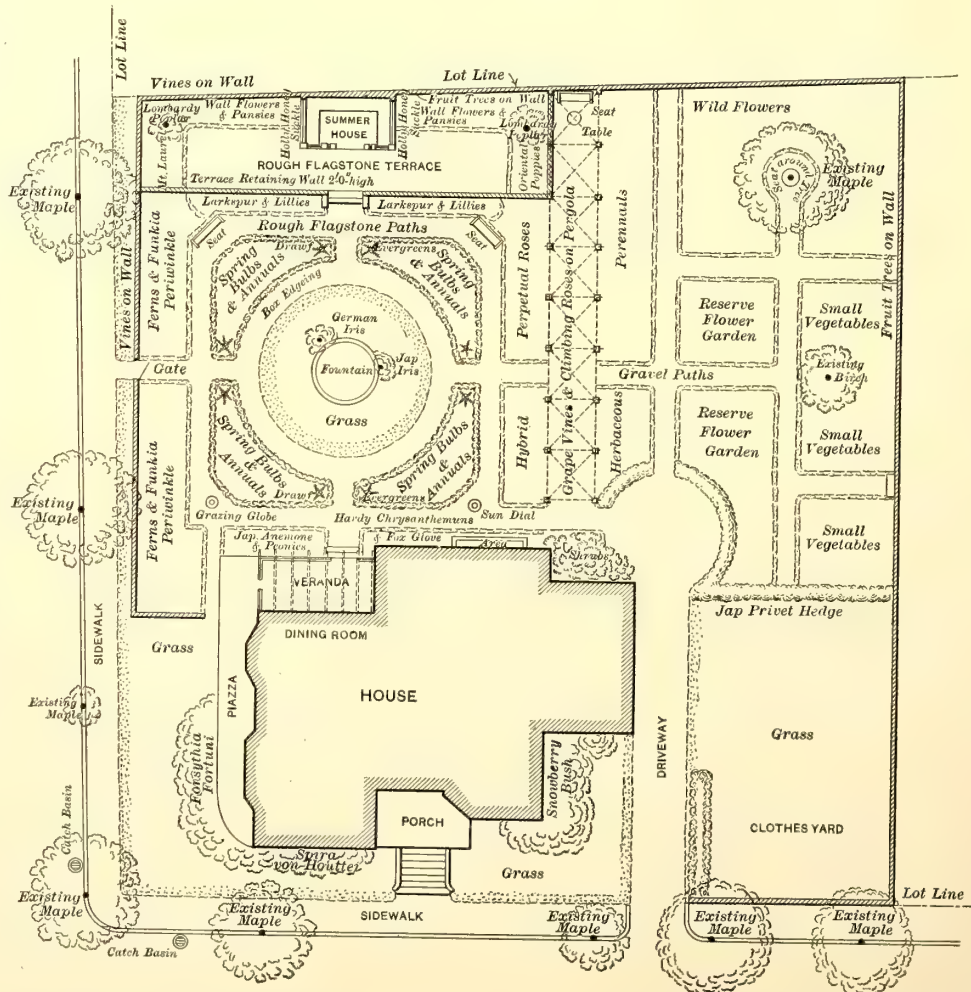
side, with the grounds in full view of passers-by, and each laid out enough like the other to suggest nothing of that individuality which home life calls for, we can come to but one conclusion: that the householders care little for the quiet and domestic life that would be so much more a fact if only the grounds were treated in an intimate and home-like manner—at least that part of the grounds which is devoted to the garden or lawn. It matters not whether the

suburban lot is large or small, owned by the rich man or the artisan, if it is to be adapted to a life of repose or the development of a personal interest in nature and her products, it must have a good measure of privacy and protection.

To-day we see many ways of acquiring comfort and refinement outside of the four walls of our houses, and the home life embraces more than living within the four walls. The accompanying plan and illustrations suggest but some of the many ways that this might be done.

It will be noticed in the plan that the house is not placed near the middle of the lot, as is usually the case on small suburban places, but it occupies the cor-

ner of the lot, leaving sufficient land to allow a uniform and expansive treatment of grounds. The prevailing custom of placing the house on or near the center of a lot is as poor as



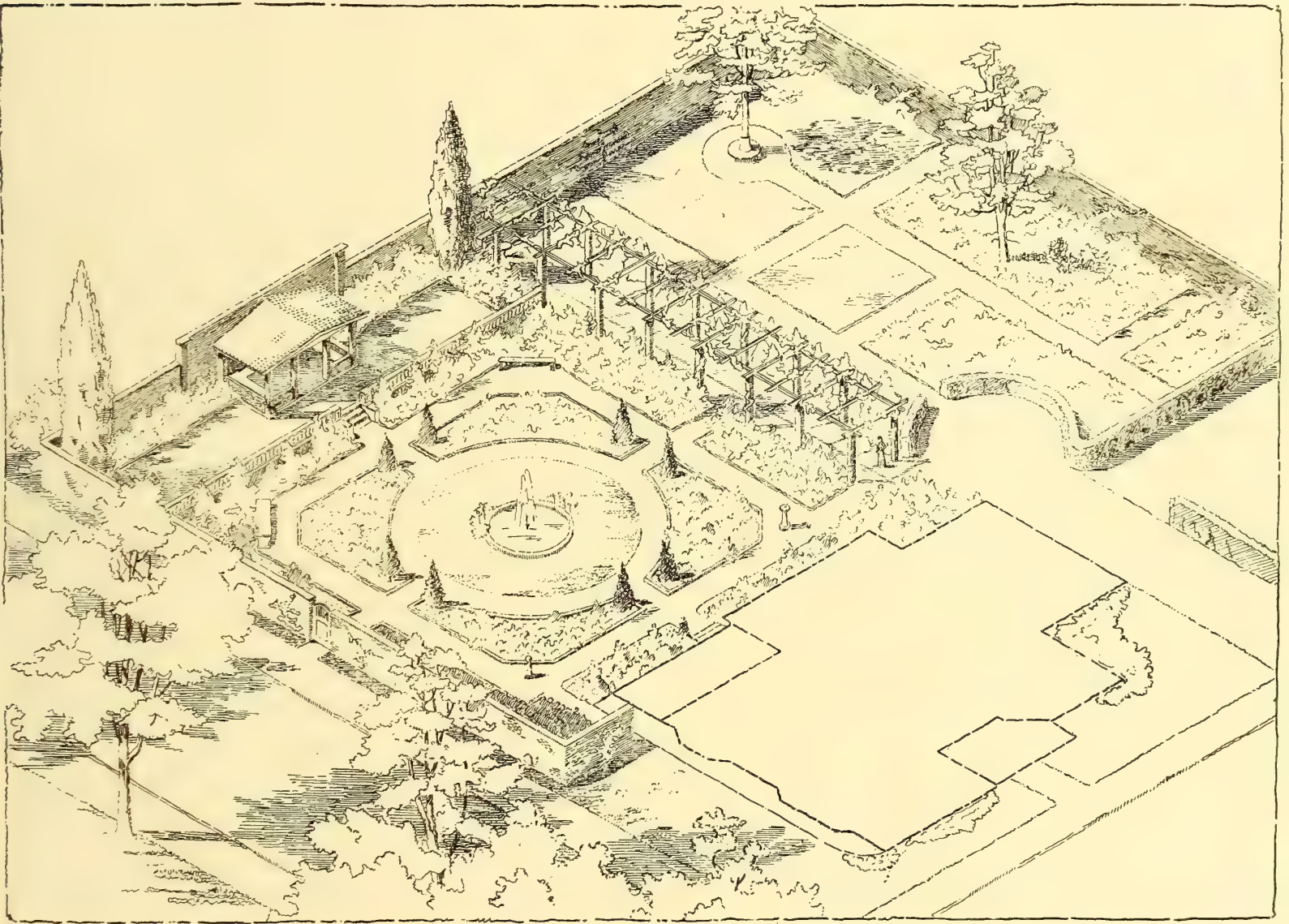
The plan of the house plot showing the position of the house and its relation to the garden

that of having the living quarters directly on the street, for it leaves no breadth of space that may be treated as one unbroken whole. However, to recommend but one lay out for grounds that shall suit any house and lot would be but a fool's trick. Conditions may require the house to be on the rear of the lot, with the garden in front, or on the front, with the garden at the back. The arrangement of the neighbor's grounds and the outlook will determine this. In any case, the grounds should be of an intimate sort, and as comfortable and retired as a room of the house.

In the particular case discussed in this article, most of the lot which was not occupied by the house was laid out as a garden, and privacy attained by surrounding the garden with a brick wall of an average height of seven feet. Thus

the land showed a difference of grade of two feet six inches that sloped from the western boundary towards the house. The scheme was to make the main garden, which is in view of the dining-room, as nearly level as possible, and to take advantage of the slope to make a terrace at the farthest side, and on this terrace to have a small summer-house against the wall. The level of the terrace is but two feet above that of the rest of the garden—just enough to make an interesting background, and to give a higher level, from which one may look down on the flower-beds and other features.

When arranging the grounds of any suburban home, one must not lose sight of the fact that the winter aspect is as important as the appearance of the place in summer.



The garden as it was planned in perspective

the garden became a little world by itself, as intimately connected with the house as possible.

However, there are many desirable ways to enclose a garden other than with solid masonry. Often a dignified picket fence covered with vines would be more in keeping with the house and sight, or it might best suit the owner's pocketbook to use a hedge or a planting of tall growing shrubs, making a natural barrier between the home grounds and their surroundings.

The lot in question (135x140), being a corner lot, shows the best arrangement by having the house near the corner of the streets, thus placing it as far away from its neighbors as possible, and leaving a generous amount of ground in one piece. Before the garden was built,

The accompanying sketch and plan of an enclosed garden shows many semi-architectural features that give a pleasing effect all the year round. All successful plantings must include shrubs and trees that are either evergreen in nature or have interesting berries or colored twigs that will give a touch of warmth at those seasons when flowers and green leaves of deciduous trees and shrubs are not in evidence.

The proper arrangement of the grounds is as important as the internal arrangement of a house. The lawn, garden and clothes yard must each be in its proper position. No amount of ornamental work can help the appearance of a place that is poorly planned. The main thing is the adaptation of the grounds to their uses. Too often one sees a place spotted by isolated plantings here and there, flower-

beds and shrubbery being casually introduced throughout a green piece of turf. Such plantings only serve to interrupt the sweep of the eye, and add confusion to a picture that might be pleasing if the grounds had been more simply arranged.

One should not attempt to combine lawn, flowers, trees and shrubs, clothes yard or service yard, into one scheme, any more than he would think of bringing together pictures, books and parlor furniture in the kitchen. There must always be certain spaces on the grounds of a suburban place, each of which is needed for some special purpose.

of the proper use of simple garden things. There is almost always an arbor with a circular top, over which are trained grape vines. This is often the central feature, and radiating from it are paths, which are frequently spanned with trellised arches, for the support of other vines and climbers. Then at the end of the garden, farthest from the house, or in a snug corner, one will be apt to find a little summer-house or garden seat; and the whole surrounded with a wall or vines or hedge on three sides, with the house on the fourth.

How unfortunate that these secluded, intimate gardens



A view of the garden showing how it was developed

The writer feels that all suburban places, no matter how small, should have gardens that are separate and distinct from the general planting, and these gardens, to be satisfying, must have something more than flowers. They should have the air of permanency, as already suggested. It is this quality that is to be found in many of the later day Colonial gardens, that are formal only to the degree of being well designed and in good proportion; and in addition to their simple accessories, flowers are in abundance, and grow in a natural and unchecked profusion.

These delightful gardens, planned by the Colonists after the type they had known at home, are still good exponents

should give way to a gaudy type of bedded out plants and tawdry substitutes, of which the chief virtue seems to be the ease with which they can show the gardener's skill in clipping them so closely as to resemble rugs. These tender exotics always occupy a conspicuous position on a lawn, and are planted in beds of set shape. This sort of gardening is often to be seen, even in these enlightened times, when everybody seems to be talking and thinking of gardens; but they are dying a slow but sure death, and to-day there is a strong plea for the old-time garden, with its air of privacy, refinement and comfort—a little world by itself, wherein one may entertain friends, away from the gaze of outsiders.

A Wanderer's Garden

By Gladys Hyatt Sinclair



NOT all who delight in the good and glory of a garden can have one to live in. Many, especially women, who would make the wilderness blossom as the rose could they but have the chance, must move so often as to make permanent planting out of the question.

"Wistfully they look and languish" at real home gardens whose people can live in them and enjoy them and add to them. These women read and plan and dream what they will do in the time when they, too, shall arrive to stay. A large percentage of rented houses have a bit of yard where flowers could grow—but it is always a different bit and one grows tired of leaving petted roses and cherished perennials behind, only to start again. Annuals? Yes; but only a few annuals are really fine and—suppose one moves in June?

But a bit of the time has come to those flower loving transients who realize that there are a few choice plants that have a snug place in the cellar every winter and will pay rent in bounteous and beautiful bloom. They can be packed close and moved any distance in spring, autumn or winter. If the gardener is certain to stay in one place all summer, they can be set in the ground; if not they can all be planted in pots, tubs or large boxes, sunk or otherwise, and moved at any time.

This sort of garden may be very beautiful and has rare advantages. Being planted anew each spring, new arrangements and color effects can easily be managed. One never needs fear drought or winter killing—and the effect of a garden of really choice and brilliant flowers springing up in an erstwhile desert yard is marvelous.

To succeed with this garden you will need two kinds of soil; one a sandy loam or the best "garden dirt" you can get, with a third old manure or a pound of bone meal to the bushel. The other soil must be lighter, composed of nearly equal parts of leafmold and sand with just a little loam. If you have no leafmold, scrape the rooty earth from under the sod, the older the better, and use it, roots and all. Failure to provide such a soil is the reason of failure with many of the finest plants.

Summer flowering bulbs form the mainstay of the wanderer's garden and of these the oxalis will be the first to bloom. They can go out as soon as danger from frost is past and will throw up their pink, white or golden flowers pertly, about three weeks from planting time. The named kinds are twenty-five cents a dozen and the mixed sorts but fifteen cents. Plant them in the loam soil four inches apart, grow in the sunshine and give them plenty of water. Their flowers and bulbs increase astonishingly. Dig and store them after light frosts.

Another low grower is the ixia. These are usually grown for winter bloom but a generous splash of the little bulbs makes a pretty show in summer. Set these and those following, where the south sunshine will not fall too warmly upon them; an eastern exposure is the most suitable.

In this protected space, besides ixias, set tuberous begonias. These are excellent investments. The number brilliance and soft satiny colors of the huge flowers make them treasures indeed. They like bone meal as fertilizer better than manure. Plant in the light soil, with the hollow of the bulb up. They need more water when blooming than most plants and a mulch of leaves or short grass is a great

benefit. Let frost kill the tops, then dry the bulbs well. They will keep in any dry cellar or cool closet, away from mice. If you wish early flowers, start begonias in pots in the window. Nothing is gained by starting them before mid-April and they can go into the ground about Decoration Day.

Gloxinias, the wanderer can have to perfection. Don't put any faith in the notion that they are hard to grow. Choose your colors carefully, the most charming light ones coming at fifteen cents each. Put them in pots rather than in the open ground. Give them the light soil and start in April with the begonia tubers. Sink the pots beside the begonias but do not sprinkle the flowers or buds; wet the earth, and never let it get dry as you would for a geranium. When the beautiful, velvety, chalice-like blooms come in June, give manure water once a week and blossoms will follow blossoms all summer. When the leaves die the plant is asleep. Set it away without water until spring, or dig and store with other bulbs.

The last of the shade plants are the fuschias. When repotted each March, they should be cut back about half. Give them the light soil, large pots and always plenty of water. Lack of water causes fuschias to drop their leaves in a puzzling way. Put them away before frost.

One of the best sun growers and cellar dwellers is the geranium. They take the rich heavy soil and plenty of water, and may be started indoors or put from the cellar to the garden when frosts are past. Started April first, they bloom about June fifteenth and a three year old geranium will often bear a dozen trusses of bloom. A row of these, their branches touching and white oxalis or sweet alyssum planted in front, is a pretty sight. Before frost, lift the geraniums, cut back if too tall, set close together in a box with six inches of dirt and put them in the cellar. Water a little about once a month. The leaves fall, but more come in the spring.

No handsomer plant grows, even in anchored gardens, than the tender hydrangeas (*H. Hortensis*). Not the old sort that fades to hideous plum color, but the clear pink Otaska or white Thomas Hogg. They are large eaters and drinkers. Treat them like the geraniums, except that the tub and all will usually go into the cellar. Repot in April or May, and prune about six inches.

Crape Myrtle (*Lagerstroemia*) is as decorative as the hydrangea and those who have seen it flourish in the little yards of negroes in the South will know it is easy to grow. It needs heavy soil and much water, and begins in July to deck itself with beautiful poppy-like flowers, with petals of pink or white. The white is the prettier.

Of the same shrubby class, and doing best in tubs, is Chinese hibiscus. It should have extra rich soil, excellent drainage and abundance of water. The flowers are like enormous morning glories. Of the reds, Miniatus is perhaps the best; very bright and inclined to be doubled. Grandiflora is single and a pretty deep pink. Water with the geraniums in winter.

The wanderer can have Chrysanthemums—and who does not want them? Old plants furnish cuttings in the spring, or one can buy them. Pot these in spongy soil and sink the pots out of doors in full sunshine. Shift to larger pots three times as the plants grow, pinching back the branches each time. A dozen branches to a plant is plenty for medium sized flowers. After the middle of July do not pinch again,

but begin giving *weak* liquid manure about once a week. While the days are yet warm, in early September, take your Chrysanthemums to the porch for a few days, then to the house. Nip out the buds in the axils of the leaves, letting the end buds develop and your "Chrysses" will equal any permanent garden's autumn flowers.

Nothing could be handsomer during August and September than a bed or large sunken box where gladiolus, tuberose, Tigridias and the Scarborough lily would grow together. Gladiolus come in every pretty shade of pink and red; clear white (Augusta), several yellows and at least one blue; and all of these banded, splotched, penciled, shaded and stained with exquisite tints. I set gladiolus out in May when geraniums go out of doors and I favor deep planting. A medium corm goes down six inches, larger ones eight and smaller ones four, being about six inches apart. They need the rich loam soil and plenty of water. Many gladiolus blooms are as charming as lilies and few flowers last longer or look finer in the house.

Tuberose are cheap and easy to grow—and they are the *very* sweetest flower. The double pearl, three for ten cents, blossoms but once. The single at five cents each is a better investment. They must be potted in April, the pots plunged later in front of the gladioli. Cut the old roots close to the

bulb before potting. They bloom in September and throw their matchless fragrance afar. If frost threatens before they are finished, carry them into the house and enjoy their sweetness to the last. Store the bulbs with those of gladiolus or tuberous begonia.

The fourth bulb in our bed, Tigridia, is not common, but it is brilliant and beautiful. The pure whites would be fine with the gorgeous Scarboroughs, which are not quite so tall. Tigridias come also in yellow, crimson, pink and spotted varieties. Treat them exactly like gladiolus, but plant only four inches deep.

As backgrounds for the wanderer's garden, use Caladium Esculentum and Cannas. Plenty of fertilizer and plenty of water comprise their simple wants. Set them at least two feet apart and dig after frost, drying in the sun and storing through the winter. If wanted very early they can be started indoors.

Next to Chrysanthemums in beauty of autumn bloom are Dahlias. When Dahlias sulk and refuse to blossom, they are either starved for food or water or they received a set-back in the spring from which they could not recover.

A cold late spring is as bad for Dahlias as a cold early autumn. Therefore it pays to start them in the house in April, though Cannas and Caladiums have to wait for lack of room.

Trees and Shrubs to Avoid in General Planting

By Irving E. Johnson



FOR the benefit of the man, who owns a small place in the suburbs, we give a few general rules and hints on what not to plant.

First: Beware of recent importations of exotics and hybrids, as it requires several years to determine whether or not the plant is suited for our climate.

Second: Use plants of highly colored and variegated foliage sparingly, as most of them are inferior to the type desired and lose their color by the middle of summer. The Blue Spruce is one of the choicest, but even this should be planted among green spruces for the best effect.

Third: Weeping forms, such as the Weeping Mulberry, Camperdown Elm, American Beech, variety pendula, and several other varieties of trees that have been produced by nurserymen, are all inferior to the types, and have no place in general planting on the small suburban estate.

Fourth: Buy plants that are grown in your locality, as very often a plant grown in South Carolina will not prove hardy in New York, although the one of the same variety and species grown in a northern nursery will be perfectly hardy.

Fifth: Avoid the so-called "novelties." Few of them are worth while, although often described in the catalogues something like this: "One of the most picturesque plants that Nature has ever given us, and a well-grown specimen will profoundly impress one."

Besides the exotics, highly colored foliaged plants, and weeping forms, we have lists of plants undesirable on account of the insects and fungus diseases that attack them, also a few half hardy plants, often catalogued as "perfectly hardy."

Easy methods of communication between one country and another, and the importation of foreign plants, have been the cause of spreading insects and diseases among trees and shrubs. Insects, such as the brown-tail, gypsy and leopard moths, San Jose and oyster shell scales, and the borers, cause the most damage, and many desirable shrubs that were formerly used by the landscape gardeners have been

discarded, although many are still sold and described in the same flowery language by nurserymen; *e. g.*, the American Mountain Ash (*Pyrus Americana*), a most attractive tree bearing large clusters of scarlet berries, is so badly attacked by borers and the scale, that it is almost impossible to get a good-sized tree. The same is true of the Balm of Gilead tree (*Populus balsamifera*) and the Black or Yellow Locust (*Robinia Pseudo acacia*). The Japanese Quince (*Cydonia Japonica*) is a favorite of the San Jose scale, although by spraying with whale-oil soap, good specimens may be grown. The Japanese Snowball (the *Viburnum opulus*) var. *sterilis*, is badly attacked by aphid, and of late years it has been difficult to grow this desirable plant. The same is true of some of the Rambler roses, especially the crimson variety, although frequent spraying with ivory soap will keep the foliage clean.

Fungus diseases, while common, have not done as much damage to ornamental plants as the insects have. They are apt to be of a local nature, and some seasons more noticeable than others. Climatic conditions have much to do with their growth. The Hawthorns are particularly subject to foliage diseases, especially the cockspur thorn, and the scarlet thorn, and where thorns are desired, other varieties can be used.

White lilac is often troubled by mildew, but not to the extent that it should be discarded. Azalea amoena, A. Indica, Eleagnus umbellata, American Holly, Leucothoe, Mahonia and English Ivy should not be planted north of Connecticut, unless protection can be given during the winter, and even then they are uncertain. The Magnolias all need well prepared ground and protected situations; the same is true of Wistaria. California Privet, north of Massachusetts, is apt to be killed to the ground every six or eight years. Ligustrum Ibota is perfectly hardy and can be used where the California privet fails; the same is true of Boston Ivy. Ampelopsis (variety Englemanni), should be used instead, as it is in every way as good.

Many more trees and shrubs that have faults might be listed, but these are the ones with which the amateur is most apt to come in contact.



CORRESPONDENCE



The Editor of *American Homes and Gardens* desires to extend an invitation to all its readers to send to the Correspondence Department inquiries on any matter pertaining to the decorating and furnishing of the home and to the developing of the home grounds.

All letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this Department.

Problems in Home Furnishing

OLD-FASHIONED WALL-PAPERS

A READER who has bought an old farmhouse writes: "In remodeling this cottage for a summer house, our idea is to make it as complete in itself as possible, so that we need not buy nor have the care of a multiplicity of furnishings. Also, we would like to make it a contrast to our winter house, which is of the conventional type, and be able to lead 'the simple life' so far as the interior contents will allow us. Some one has suggested the use of old-fashioned papers. Would these be appropriate in the living-room, dining-room, and entrance hall?"—C. E., Conn.

Quite a distinctive character may be given a summer house by a careful selection of old-fashioned wall-papers, and the patterns may be more decorative than those usually applied to the city dwellings. In the entrance hall, for instance, a landscape or picture paper printed in gray will make an avenue of neutral tone, into which the various rooms will open harmoniously. In the living-room, with its southerly exposure, a green foliage paper will decorate the walls without the addition of pictures. The east dining-room may be made cheerful with a wide scenic border (illustrated in the March number of this magazine, page 112) printed in yellow and orange. If hardwood floors are not laid in these rooms, a yellow floor paint may be applied, with a gray paint for the bedrooms. For the sleeping-rooms there are attractive wall-papers in chintz effect with cretonne to match. The latter may be used for a bed cover, for draping a dressing stand, and for covering a shirtwaist box. Glazed chintz may be made up into window shades, if a plain or two-toned paper is chosen for the walls.

If there are any small "jogs" or recesses in the house there may be shelves or seats built in to take the place of movable pieces of furniture. A high-backed settle may be designed for the hall, and a mirror fitted into a convenient panel. The corners of the dining-room may have cupboards built in with latticed doors, and the living-room may have low bookcases against the wall. The following of this plan would do away with quite a number of the furnishings ordinarily required in a summer dwelling place.

STAIR CARPET FOR YELLOW WALL-PAPER

From Mrs. W. F. D. of Virginia comes an inquiry about stair and hall carpet: "Please suggest coloring and kind of carpet for my hall. The woodwork is painted white with the rail of walnut. The wall-paper is a deep yellow in small, set pattern of two tones. What is the best carpet for durability and general appearance and its

cost? Give, also, some substitute at less cost."

For this special hall a Wilton carpet in olive green with a touch of brown or yellow in the design would cost \$2.75 a yard. The stair carpet is made to match with the edges finished with a narrow border. A velvet carpet at \$1.75 a yard would give almost the same coloring, but with less resistance for hard wear. At \$1.50 a yard a body Brussels carpet in dark red mixed with green and tan would be attractive. If a smaller amount must be paid, a tapestry Brussels at \$1.10 a yard, without stair carpet to match, in a mottled green would look well. In choosing a hall carpet, not only the happy combination with the wall-paper must be sought for, but a color that will not be too light for service nor too dark for the limited light that is usually allowed this part of the house.

DYEING RUGS

In re-adjusting the furnishings of a house, one may often improve upon a previous arrangement, and oftentimes a definite color scheme worked out without buying anything new. A New Jersey subscriber writes of her success in this line and asks if it would be possible to have an old Oriental rug that is soiled and faded, dyed a dark brown.

A sample of the desired color would need to be submitted to the dyeing company with a description of the colors in the rug. The success of any piece of dyeing is problematical, but if one is willing to take the risk the result is often more than satisfactory. A plain red rug can be first bleached and afterward dyed any color, and light green can be dyed a deeper shade.

COLOR SCHEME FOR DARK ROOM

"Is there any color we can introduce in our upstairs sitting-room which has a north exposure to make it more cheerful? Three years ago we had a bright red paper put on the wall, hoping to make a pretty evening effect. We have since added red-and-gold draperies and a plain red Axminster rug, but without reaching what we so much desired—a livable, pleasing atmosphere. We can dispose of the present furnishings into other parts of the house if you will give some treatment that will be sure to be satisfactory."—A. H., Albany, N. Y.

The woodwork of the room is not mentioned by the correspondent, but if it can be painted a cream white in an egg-shell finish it will be a help. A pumpkin-colored paper for the walls in a small, set pattern, rug of dark blue, mahogany and gold, curtains of yellow and white madras and the furniture covered with gold and brown material will make a color scheme suggestive of sunlight. If an open fire can be added, even with a small Franklin stove, it will make another element of cheer, and lamps with light-colored shades will be a help in the evenings.

Garden Work About the Home

PLANTS FOR THE ROCK GARDEN

A PROPOS of the paper on Rock Gardens in last issue of *American Homes and Gardens*, we have been asked to give a list of plants to be grown in the rock garden.

The Prickly Pear (*Opuntia* in many varieties) is the best plant for the dry top of a sunny rock. An inch or two of soil is enough for it, and no drought can do it harm. Such a dry place is desirable because no grass can grow there, and sorrel, which is the only weed that bothers, is easy to pull up. It is not good fun to weed a mass of prickly pears, as anyone who tries will discover.

The flowers of the prickly pear are large—three to five inches across—clear yellow, and beautiful in form and texture. They are open only a day, but a bed three feet in diameter will bear more than one hundred and fifty blossoms. It is in bloom about the fourth of July. The fruits, which ripen in September, are deep red and purple, and can be eaten if they are first peeled.

The stone crop (*Sedum acre*) will grow anywhere, and is always pleasing, whether showing its yellow flowers or its cheerful winter green. Other Sedums are good, except some of the tall kinds, like *S. Telephium*, which is a difficult weed to eradicate if it once takes hold. The small Sedums spread over the rock and cover much more space than the earth they are planted in.

Sempervivums, the house leeks, or hen and chickens, are pretty rosettes for use in the small crevices of the rocks, and, so planted, they are nicer than one could imagine who had only seen them used in carpet bedding on the showy lawns of a rural cemetery.

Any of the small irises are good. *I. reticulata* and *I. histrioides* bloom very early. *Iris pumila* will stand much dryness, though not so much as *I. cristata*, which spreads rapidly in shallow soil.

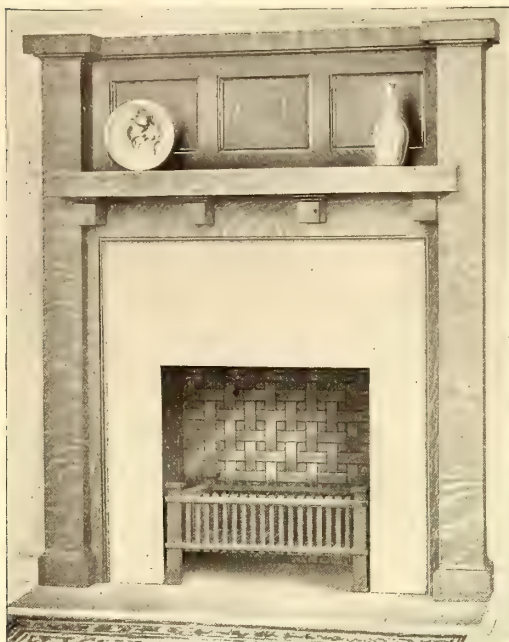
Phlox subulata sometimes dries out in an exposed situation, but will often grow again from the roots. It forms a closely matted carpet on the rock. Its roots will go great distances in a crack of the rock, and in such a place it will not dry up. The varieties alba and bridesmaid are better in color than the type.

Phlox repens is good, but must have deep soil. Its foliage is of little value.

Silene Pennsylvanicum will grow in dry soil, and has pink or white star-like flowers in May.

Iberis Tenoreana and *I. Sempervirens* do very well in dry places, and will endure some shade. The white flowers in May are very good, and the leaves are evergreen.

The rock cress *Arabis Alpina* has white flowers in early spring. Planted at the top of a low wall, it trails down for a foot or more.



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The wooden racks, on which the bottles rest in the washboiler, is made in this manner: Have two strips of wood measuring 1 inch high, 1 inch wide, and 2 inches shorter than the length of the boiler. On these pieces of wood tack thin strips of wood that are 1½ inches shorter than the width of the boiler. These cross-strips should be about 1 inch wide, and there should be an inch between two strips. This rack will support the jars and will admit the free circulation of boiling water about them. Young willow branches, woven into a mat, also make a good bed.

The wire basket is a saver of time and strength (Fig. 1). The fruit to be peeled is put into the basket, which is lowered into a deep kettle partially filled with boiling water. After a few minutes the basket is lifted from the boiling water, plunged for a moment into cold water, and the fruit is ready to have the skin drawn off.

A strong wire sieve is a necessity when purees of fruit are to be made (Fig. 2). These sieves are known as puree sieves. They are made of strong wire and in addition have supports of still stronger wire.

A fruit pricker is easily made and saves time (Fig. 3). Cut a piece half an inch deep from a broad cork; press through this a dozen or more coarse darning needles; tack the cork on a piece of board. Strike the fruit on the bed of needles, and you have a dozen holes at once. When the work is finished, remove the cork from the board, wash and dry thoroughly. A little oil on the needles will prevent rusting. With needles of the size suggested there is little danger of the points breaking, but it

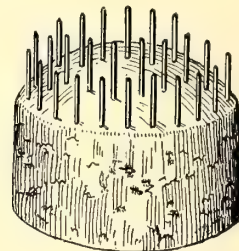


FIG. 3.—FRUIT PRICKER.

is worth remembering that the use of pricking machines was abandoned in curing prunes on a commercial scale in California because the steel needles broke and remained in the fruit.

A wooden vegetable masher is indispensable when making jellies and purees (Fig. 4).

A syrup gage and glass cylinder (Fig. 5 A and B), are not essential to preserving, canning, and jelly making, but they are valuable aids in getting the right proportion of sugar for fruit or jelly. The syrup gage cost about 50 cents and the cylinder about 25 cents. A lipped cylinder that holds a little over a gill is the best size.

Small iron rings, such as sometimes come off the hub of cart wheels, may be used instead of a tripod for slightly raising the preserving kettles from the hot stove or range.

To make a flannel straining bag, take a square piece of flannel (27 by 27 inches is a good size), fold it to make a three-cornered bag, stitch one of the sides, cut the top squares across, bind the opening with strong, broad tape, stitch on this binding four tapes with which to tie the bag to a frame.

To use this bag, tie it to a strong frame or to the backs of two kitchen chairs. If the chairs are used, place some heavy articles in them; or the bag may hang on a pole (a broom handle), which rests on the backs of the chairs. A high stool turned

(Continued on page 14)

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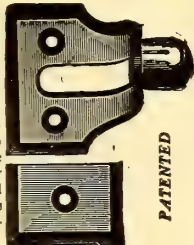
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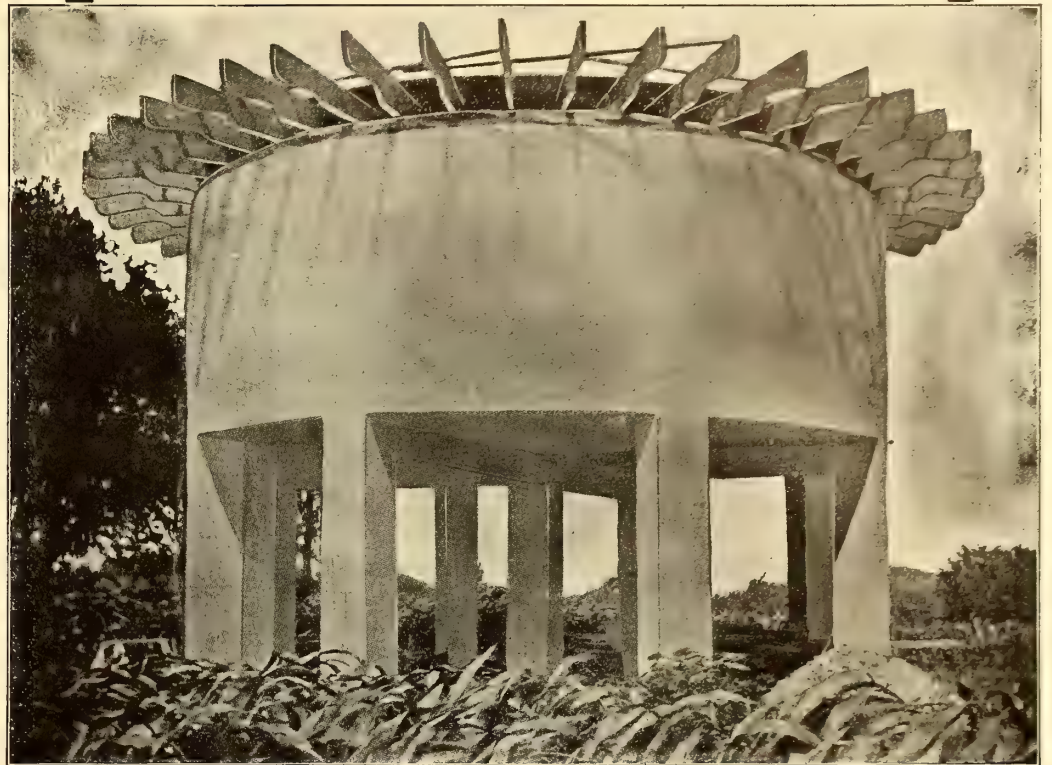
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upside down makes a good support for the bag. Put a bowl on the floor under the bag, then pour in the fruit juice, which will pass through comparatively clear.

Before it is used the bag should be washed and boiled in clear water.

SELECTION AND PREPARATION OF THE FRUIT.

The selection of fruit is one of the first steps in obtaining successful results. The

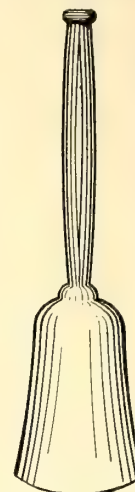


FIG. 4.—WOODEN VEGETABLE MASHER.

flavor of fruit is not developed until it is fully ripe, but the time at which the fruit is at its best for canning, jelly making, etc., is just before it is perfectly ripe. In all soft fruits the fermentative stage follows closely upon the perfectly ripe stage; therefore it is better to use under-ripe rather than over-ripe fruit. This is especially important in jelly making for another reason also: In over-ripe fruit the pectin begins to lose its jelly-making quality.

All fruits should, if possible, be freshly picked for preserving, canning, and jelly making. No imperfect fruit should be

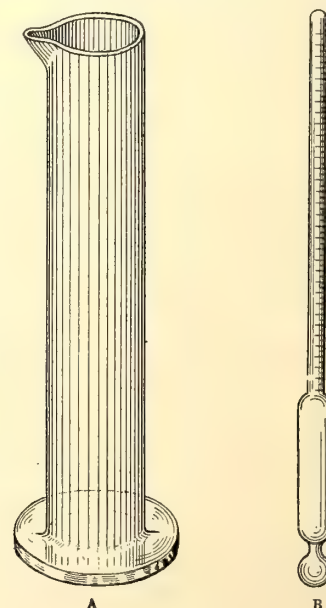


FIG. 5.—GLASS CYLINDER (A) AND SYRUP GAGE (B).

canned or preserved. Gnarly fruit may be used for jellies or marmalades by cutting out defective portions. Bruised spots should be cut out of peaches and pears. In selecting small-seeded fruits, like berries, for canning, those having a small proportion of seed to pulp should be chosen. In dry seasons berries have a larger proportion of seeds to pulp than in a wet or normal season, and it is not wise to can or preserve such fruit unless the seeds are removed. The fruit should be rubbed through a sieve that is fine enough to keep back the seeds. The strained pulp can be preserved as a puree or marmalade.

(Continued on page 16)

ALCOHOL Its Manufacture Its Denaturation Its Industrial Use

The Cost of Manufacturing Denaturized Alcohol in Germany and German Methods of Denaturation are discussed by Consul-General Frank H. Mason in *Scientific American Supplement* 1550.

The Use, Cost and Efficiency of Alcohol as a Fuel for Gas Engines are ably explained by H. Diederichs in *Scientific American Supplement* 1596. Many clear diagrams accompany the text. The article considers the fuel value and physical properties of alcohol, and gives details of the alcohol engine wherever they may be different from those of a gasoline or crude oil motor.

In *Scientific American Supplement* 1581 the Production of Industrial Alcohol and its Use in Explosive Motors are treated at length, valuable statistics being given of the cost of manufacturing alcohol from farm products and using it in engines.

French Methods of Denaturation constitute the subject of a good article published in *Scientific American Supplement* 1599.

How Industrial Alcohol is Made and Used is told very fully and clearly in No. 3, Vol. 95, of the *Scientific American*.

The most complete treatise on the Modern Manufacture of Alcohol, explaining thoroughly the chemical principles which underlie the process without too many wearisome technical phrases, and describing and illustrating all the apparatus required in an alcohol plant is published in *Scientific American Supplements* 1603, 1604 and 1605. The article is by L. Baudry de Saunier, the well-known French authority.

In *Supplements* 1607, 1608, 1609 we publish a digest of the rules and regulations under which the U. S. Internal Revenue will permit the manufacture and denaturation of tax free alcohol.

A comparison of the Use of Alcohol and Gasoline in Farm Engines is given in *Scientific American Supplements* 1634 and 1635 by Prof. Charles E. Lucke and S. M. Woodward.

The Manufacture, Denaturing and the Technical and Chemical Utilization of Alcohol is ably discussed in the *Scientific American Supplements* 1636 and 1637 by M. Klar and F. H. Meyer, both experts in the chemistry and distillation of alcohol. Illustrations of stills and plants accompany the text.

The Sources of Industrial Alcohol, that is the Farm Products from which alcohol is distilled, are enumerated by Dr. H. W. Wiley in *Scientific American Supplements* 1611 and 1612 and their relative alcohol content compared.

The Distillation and Rectification of Alcohol is the title of a splendid article by the late Max Maercker (the greatest authority on alcohol) published in *Scientific American Supplements* 1627 and 1628. Diagrams of the various types of stills in common use are used as illustrations.

In *Scientific American Supplement* 1613 the Uses of Industrial Alcohol in the Arts and in the Home are discussed.

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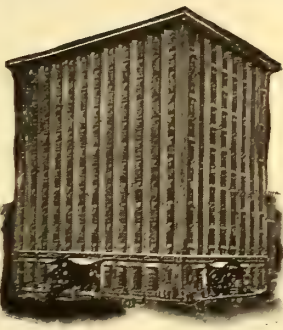
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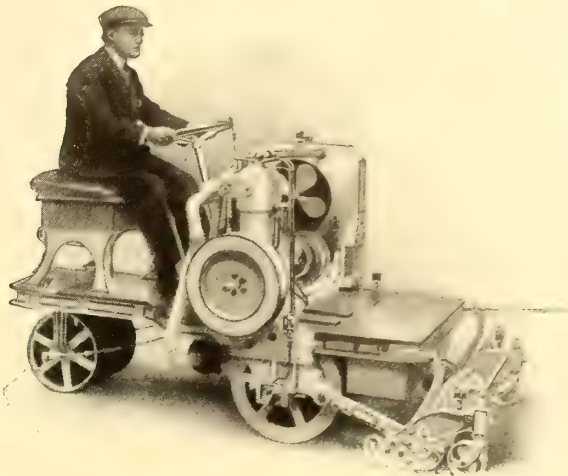
Do you want a machine that will greatly improve your lawn?

ONE

that will thoroughly roll it.
that will cut it finer than it has ever been cut before.
that will cut it in one third the time it has ever been cut before.
that leaves it just like velvet with no horse markings.
that pays for itself in two seasons.

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THIS IS THE MACHINE

The U. S. Government has been purchasing each of the last three years.

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THIS IS THE MACHINE

That has been so successfully used on many of the leading Golf Grounds, Parks and Private Estates during the last seven years.

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AMMONIATED LAWN LIME

KILLS WEEDS

Applied as a light top dressing to Lawns it kills all flat leaved weeds such as Dandelions, Daisies, Plantain, Sorrel, Chickweeds, Moss, etc., and produces a wonderful, luxuriant, rich, green growth of Lawn Grasses which is distinctly noticeable fifty feet away.

Absolutely guaranteed effective in 48 hours or money refunded.

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Prices. 2 lbs., 25c.; 5 lbs., 50c.; 25 lbs., \$2.00; 50 lbs., \$3.50; 100 lbs., \$6.00.

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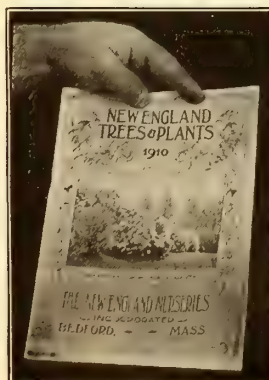
The vitality and hardiness of our products are due to exceptional soil conditions and a rigorous climate. Their High Quality is due to a thorough knowledge of propagation and cultivation.

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are the finest in America. Why? They have been laid out and planted by men who know how. Our concern is responsible for the treatment of hundreds of them.

Our 1910 Catalog, mailed free, tells the whole story. Don't buy—don't plant, until you have seen it.

The New England Nurseries, Inc., Bedford, Mass.



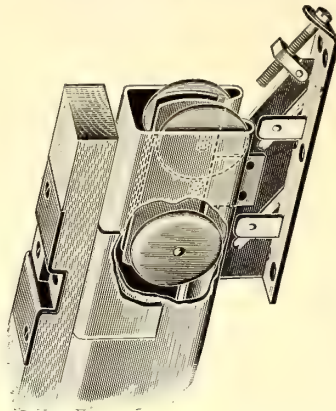
Lane's Trolley Parlor Door Hangers and Track

THE particularly distinguishing features of the Lane Trolley Door Hanger equipment are the excellence of the ball bearing and the lateral as well as vertical adjustment of the track.

Lane Trolley Hangers are made in both the rigid and adjustable pendant styles and with both single and double trucks. All are fitted with machined and hardened ball bearings as shown and in all the various details the quality of Lane products is maintained, thus virtually placing them in a class by themselves.

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Omaha, Neb.: 1116 and 1118 Douglas Street

When fruit is brought into the house put it where it will keep cool and crisp until you are ready to use it.

The preparation of fruit for the various processes of preserving is the second important step. System will do much to lighten the work.

Begin by having the kitchen swept and dusted thoroughly, that there need not be a large number of mold spores floating about. Dust with a damp cloth. Have plenty of hot water and pans in which jars and utensils may be sterilized. Have at hand all necessary utensils, towels, sugar, etc.

Prepare only as much fruit as can be cooked while it still retains its color and crispness. Before beginning to pare fruit have some syrup ready, if that is to be used, or if sugar is to be added to the fruit have it weighed or measured.

Decide upon the amount of fruit you will cook at one time, then have two bowls—one for the sugar and one for the fruit—that will hold just the quantity of each. As the fruit is pared or hulled, as the case may be, drop it into its measuring bowl. When the measure is full put the fruit and sugar in the preserving kettle. While this is cooking another measure may be prepared and put in the second preserving kettle. In this way the fruit is cooked quickly and put in the jars and sealed at once, leaving the pans ready to sterilize another set of jars.

If the fruit is to be preserved or canned with syrup, it may be put into the jars as fast as it is prepared. As soon as a jar is full, pour in enough syrup to cover it.

If several people are helping and large kettles are being used for the preserving, or where fruit (like quinces and hard pears) must be first boiled in clear water, the pared fruit should be dropped into a bowl of cold water made slightly acid with lemon juice (one tablespoon of lemon juice to a quart of water). This will keep the fruit white.

All large, hard fruit must be washed before paring. Quinces should be rubbed with a coarse towel before they are washed.

If berries must be washed, do the work before stemming or hulling them. The best way to wash berries is to put a small quantity into a colander and pour cold water over them; then turn them on a sieve to drain. All this work must be done quickly that the fruit may not absorb much water.

Do not use the fingers for hulling strawberries. A simple huller can be bought for five cents.

If practicable, pare fruit with a silver knife, so as not to stain or darken the product. The quickest and easiest way to peel peaches is to drop them into boiling water for a few minutes. Have a deep kettle a little more than half full of boiling water; fill a wire basket with peaches; put a long-handled spoon under the handle of the basket and lower into the boiling water. At the end of three minutes lift the basket out by slipping the spoon under the handle. Plunge the basket for a moment into a pan of cold water. Let the peaches drain a minute, then peel. Plums and tomatoes may be peeled in the same manner.

If the peaches are to be canned in syrup, put them at once into the sterilized jars. They may be canned whole or in halves. If in halves, remove nearly all the stones or pits. For the sake of the flavor, a few stones should be put in each jar.

When preparing cherries, plums, or crab apples for canning or preserving, the stem or a part of it may be left on the fruit.

(Continued on page 18)



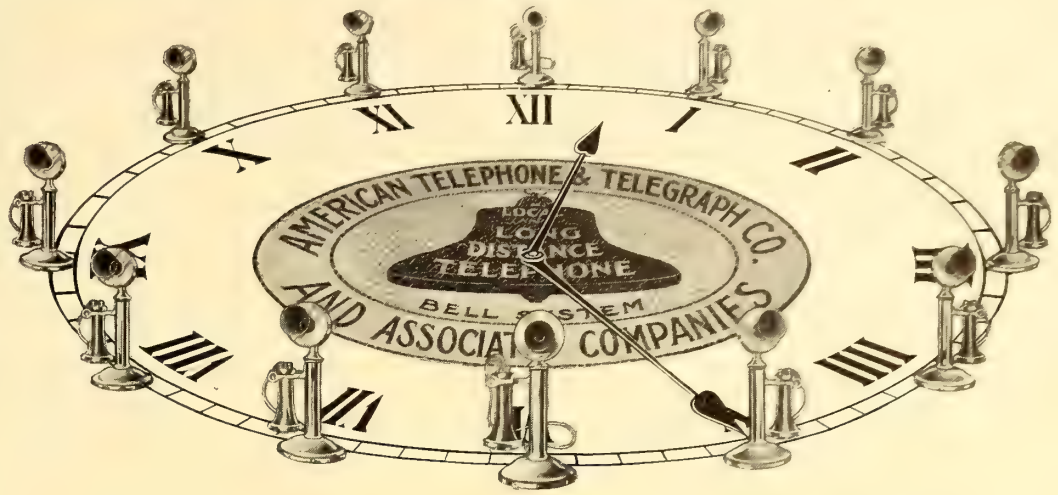
This room will interest you if you are trying to decide upon the wood finish for your dining-room where mahogany furniture will be used.

THE answer to your problem is Murphy Varnish Company's ivory white enamel. This makes the ideal setting for old or new mahogany furniture. Where the interior wood trim is of oak or ash, if treated with one of the artistic natural wood stains made by Murphy Varnish Company, and combined with harmonious wall covering (thus becoming a part of the wall treatment) it will provide a suitable setting for furniture of any type.

If you desire the service of an expert decorator without cost to yourself, write Margaret Greenleaf, Consulting Decorator for Murphy Varnish Company. She will supply you with complete color scheme and samples, including wood panels, wall covering, draperies, etc. Send your plans today and the scheme will be made up for you. No stock schemes are supplied.

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345 Fifth Avenue
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The Always-on-Duty Telephone

Your Bell Telephone is on duty 1440 minutes every day. So is the telephone exchange; so are the toll lines which radiate through the neighboring communities; so are the long distance lines which connect you with far-away cities and other radiating systems.

The whole Bell System is on duty 1440 minutes a day—and if any of these minutes are not used, their earning power is irrevocably lost.

Like the Police Force or the Fire Department, the telephone is not always working—but it is always on duty and always costing money. But you would not be satisfied with the fire department if your burning house had to take its turn; nor with the police force if you had to wait in line to receive protection.

You want service at once. That is exactly what the Bell System endeavors to give you—immediate attention, instantaneous service. It strives to be always ready to receive your call at any point, and connect you with any other point—without postponement or delay.

It would be much cheaper if telephone customers would be content to stand in line, or if their communications could be piled up to be sent during slack hours; or if the demand was so distributed as to keep the whole system comfortably busy for 1440 consecutive minutes a day.

But the public needs immediate and universal service and the Bell System meets the public's requirements.

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Our papers are the result of a steady growth and development—a process of elimination that gives them an artistic and practical value out of all proportion to their cost. They are the expression of the best artists and workmen.

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COMPANY
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ARE YOU GOING TO BUILD?

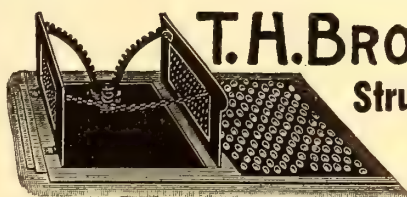
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Isn't This the Year You Resolved to Have Your Trees Looked After?

Didn't you promise yourself last Fall that this Spring you would call in an expert and have him ascertain what your trees need? Were you not afraid, a year ago, that unless something was done for your trees that you would lose some of them? Honest now, when you looked at the black spots, or the snarled limbs, or noted the suspicious way the old tree acted, didn't you say to yourself that as soon as possible you would have somebody, who knew all about trees to see what ailed them?

The Davey Tree Experts are Now in the North

Their services are available immediately to tree owners from the Missouri Valley Eastward to the Atlantic. They will call and inspect your trees and tell you exactly what they need when in your section, without cost to you. They are the experts you had in mind, for without John Davey's methods a tree man is not properly trained. Their success in saving the lives of trees is now a matter of record in almost every part of the country. They love trees, they have studied tree needs, they know trees as an experienced physician knows the human body.

Trained Under John Davey, "The Father of Tree Surgery"

The Davey Experts use exclusively the methods which are the fruit of his life work for and among the trees, demonstrated in thousands of instances to be effective. Selected for their peculiar fitness, taught in the Davey Institute of Tree Surgery and given practical instruction in field work by John Davey and his associates, the young men who are shown in the picture below show a small part of the field force of The Davey Tree Expert Company. They have operated successfully in the South during the Winter and their services are now available in the North.

"New Life In Old Trees," by J. Horace McFarland, just out. Free on application to tree owners. When you write tell us how many trees you have, what kinds, where located, etc.

THE DAVEY TREE EXPERT CO., Inc., 125 Ash Street, Kent, Ohio

Representatives in Principal Cities from the Missouri Valley and Eastward to the Atlantic
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Elkhart Buggies

are the best made, best grade and easiest riding buggies on earth for the money.

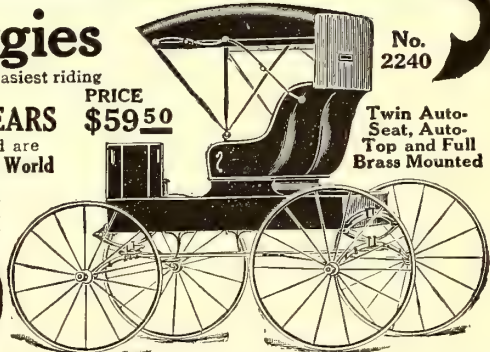
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We ship for examination and approval, guaranteeing safe delivery, and also to save you money. If you are not satisfied as to style, quality and price you are nothing out.

May We Send You Our Large Catalogue?

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Write for Our Free Book on Home Refrigeration

This book tells how to select the home Refrigerator—how to know the poor from the good—how to keep down ice bills. It also tells how some Refrigerators harbor germs—how to keep a Refrigerator sanitary and sweet—lots of things you should know before buying ANY Refrigerator.

It tells all about the "Monroe," the refrigerator with inner walls made in one piece from unbreakable SOLID PORCELAIN an inch thick and highly glazed, with every corner rounded. No cracks or crevices anywhere. The "Monroe" is as easy to keep clean as a china bowl.

The "Monroe"

Most other refrigerators have cracks and corners which cannot be cleaned. Here particles of food collect and breed germs by the million. These germs get into your food and make it poison, and the family suffers—from no traceable cause.

The "Monroe" can be sterilized and made germlessly clean in an instant by simply wiping out with a cloth wrung from hot water. It's like "washing dishes," for the "Monroe" is really a thick porcelain dish inside.



Always sold DIRECT and at Factory Prices. Cash or monthly payments.

The high death rate among children in the summer months could be greatly reduced if the Monroe Refrigerator was used in every home.

The "Monroe" is installed in the best flats and apartments, occupied by people who CARE—and is found today in a large majority of the VERY BEST homes in the United States. The largest and best Hospitals use it exclusively. The health of the whole family is safeguarded by the use of a Monroe Refrigerator.

When you have carefully read the book and know all about Home Refrigeration, you will know WHY and will realize how important it is to select carefully. Please write for the book today.

Monroe Refrigerator Co., Station P, Cincinnati, O.

NOTE CAREFULLY

The Solid Porcelain Monroe is so costly to manufacture that but few could afford it if sold through dealers. So we sell direct and give our customers the dealers' 50 per cent commission. This puts the Monroe within the reach of the MANY, at a price they can afford.

Sent Anywhere on Trial

We will send the Monroe to any responsible person anywhere to use until convinced. No obligation to keep it unless you wish to. The Monroe must sell itself to you on its merits.

When preparing to make jelly have ready the cheese-cloth strainer, enameled colander, wooden spoons, vegetable masher, measures, tumblers, preserving kettles, and sugar.

If currant jelly is to be made, free the fruit from leaves and large stems. If the jelly is to be made from any of the other small fruits, the stem and hulls must be removed.

When the jelly is to be made from any of the large fruits the important part of the preparation is to have the fruit washed clean, then to remove the stem and the blossom end. Nearly all the large fruits are better for having the skin left on. Apples and pears need not be cored.

MAKING SYRUP FOR USE IN CANNING AND PRESERVING.

Such syrups as are used in canning and preserving are made with varying proportions of water and sugar. When the proportion of sugar is large and that of the water small the syrup is said to be heavy. When the water predominates the syrup is light.

There are several methods of measuring the proportion of sugar in a syrup. The most scientific and accurate is with the syrup gage. Careful measurement or weighing is, however, quite satisfactory for all ordinary work if the syrup need not be boiled a long time. In boiling, the water evaporates and the syrup grows thicker and richer. The amount of evaporation depends upon the surface exposed and the pressure of the atmosphere. For example, if a large quantity of syrup is boiled in a deep kettle the evaporation will not be rapid. If the same quantity of syrup were boiled the same length of time in a broad, shallow kettle the water would evaporate more rapidly and the syrup would be thicker and heavier. If a given quantity of syrup were boiled the same length of time in a high altitude, Colorado for example, and at the sea level, it would be found that the syrup boiled at the sea level would be thicker and less in volume than that boiled in Colorado. From this it will be seen that it is difficult to say what proportion of sugar a syrup will contain after it has been boiling ten or more minutes. Of course by the use of the syrup gage the proportion of sugar in a syrup may be ascertained at any stage of the boiling. After all, however, it is possible to measure sugar and water so that you can know the percentage of sugar when the syrup begins to boil. The following statement gives the percentage of sugar at the time when the syrup has been boiling one minute and also what kind of syrup is suitable for the various kinds of fruit:

One pint of sugar and 1 gill of water gives syrup of 40 deg. density: Use for preserved strawberries and cherries.

One pint sugar and one-half pint water gives syrup of 32 deg. density.

One pint sugar and 3 gills water gives syrup of 28 deg. density: Use either this or the preceding for preserved peaches, plums, quinces, currants, etc.

One pint sugar and 1 pint water gives syrup 24 deg. density: Use for canned acid fruits.

One pint sugar and 1½ pints water gives syrup of 17 deg. density.

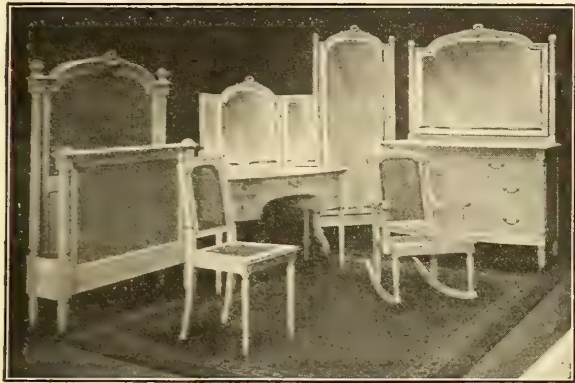
One pint sugar and 2 pints water gives syrup of 14 deg. density: Use either of these two light syrups for canned pears, peaches, sweet plums, and cherries, raspberries, blueberries, and blackberries.

The lightest syrups may be used for filling up the jars after they are taken from

(Continued on page 20)



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So Perfect and So Peerless



Summer Furnishings FOR COUNTRY HOMES OF EVERY SIZE

So varied is our exhibit of Summer Styles that persons of exacting taste will find not only rare and exclusive pieces of incomparable beauty but endless artistic suggestions for furnishing the country house at small expense where price is an important consideration.

Inspection reveals those small niceties of construction and perfection of detail which give to **Flint's Fine Furniture** its distinctive elegance, whether in Cottage Furniture of refreshing simplicity, Mission pieces for Bungalow use or fine Enameled and Light Woods embellished with hand painted decorations.

Our large display in Reed, Rattan and Willow furniture—artistic and durable—is very moderately priced.

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Upwards of 100 acres of our nursery are planted with the handsomest and choicest lot of specimens in the world.

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Many acres of our nursery are devoted to their cultivation.

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We carry at all times large quantities of the best varieties.

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In all varieties for every place and pergola.

BAY TREES

We have several thousand of these attractive decorative trees in all forms and sizes. A visit to our nursery would be pleasing if only to see these trees.

DECORATIVE PLANTS FOR CONSERVATORIES, INTERIOR and EXTERIOR DECORATIONS

We grow in our 150,000 feet of green houses.

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For Spring, Summer, Autumn and Winter flowering.

LAWN GRASS SEED

B. & A. Rutherford Park Evergreen mixture.

TUBS

We manufacture them in all shapes and sizes. Ask for price list.

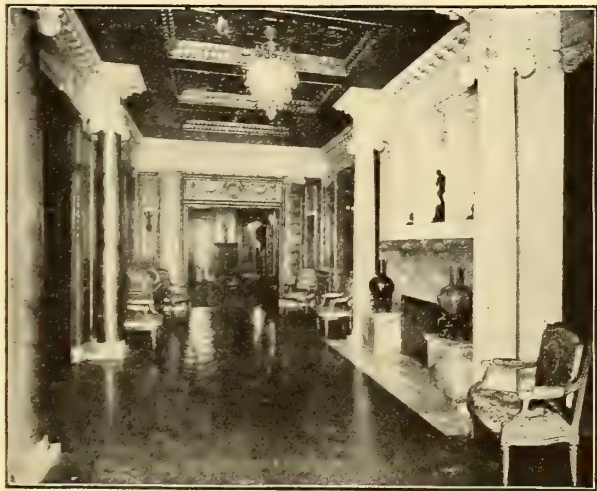
Our **Illustrated General Catalog No. 90** is comprehensive and especially interesting, instructive and helpful to intending purchasers or those who are unable to visit our nursery. It describes each article, giving prices. Will be sent upon request. Special prices on quantities.

The **General Supervision of Public Grounds and Private Estates** a Specialty

We plan and plant grounds and gardens everywhere. Visitors to our Nurseries are always welcome.

We are only a few minutes from New York City.

NURSERYMEN, FLORISTS and PLANTERS, RUTHERFORD, N. J.



GET your floors laid now. Do not wait until September 1st when every one is clamoring that his floors must be attended to at once as he is returning to the city. The work will cost you less now than if you wait until all our AGENTS in the VARIOUS CITIES are rushed with business.

If you put in our **HARDWOOD FLOORS** you will have no more heavy carpets to sweep and the servant question will thus be one step nearer solution. Our **ORNAMENTAL FLOORING** is clean and sanitary and costs a little more than a good carpet.

Do not buy common lumber yard flooring which stands out in open sheds absorbing moisture, for it will surely warp, twist and shrink, causing unsightly cracks which will prove a lodging place for dirt. Install our air-seasoned, kiln-dried **PARQUETRY** which is kept in heated storage rooms until moment of shipment. If possible, have our agent lay it. If we have no agent near you, we will be glad to make you laying plans for the use of your local carpenter.

We have been manufacturing for twenty-five years and own our own trees, saw mill and factories. *Send for Our Book of Designs.*

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—With the automobile owner rests the whole tire proposition—absolutely—and the thing he is most interested in, is — How Much Tire Mileage He Can Get for His Money!

Exactly these reasons and no other have made

Diamond TIRES

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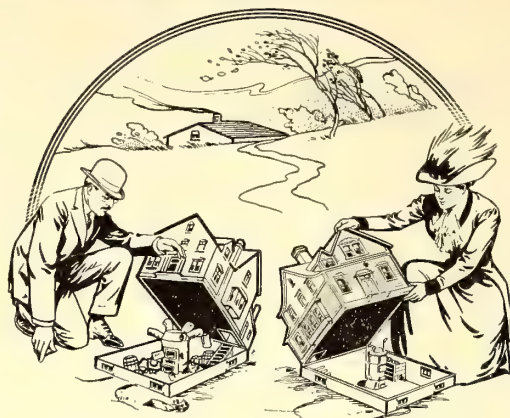
“USERS KNOW”

Exactly these reasons and no other have made
Diamond tires are made for all types of rims, including the Quick Detachable Clincher, Regular Clincher, Fisk and Mechanical (Dunlop type).

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Ask the agent: "How heated?"

People are fast learning the difference between a house equipped with old fashioned heating methods or inferior apparatus and the home-making qualities of a house fitted with ideal heating. They shun one and seek the other. The living, renting and sales value of any building, large or small, is vastly increased by



Look into the Heating Question before you rent or buy.

AMERICAN & IDEAL RADIATORS & BOILERS

Boilers and AMERICAN Radiators save so much in coal and cleaning, in time and temper, in health and happiness, and without rusting or repairs, that they quickly repay their cost. In all the world they have no equal—hence the wide use by and high endorsement of all eminent engineers and architects in every civilized country where heating is needed.

ADVANTAGE 16: The phenomenal success of IDEAL Boilers is also largely due to the fact that they are made in sections so that even their largest parts can be carried through an ordinary size doorway. For this reason they can be quickly put in old buildings without disturbing the occupants. In fact, in unmodernized or old types of houses they can be erected, including the necessary piping and radiators, without the necessity of removing the stoves or hot-air furnace until the new heating outfit is ready to fire up. They can be quickly erected in wintry weather when the old, crude heaters get badly worn or collapse. Ask for catalog "Ideal Heating" which tells *all the advantages*.



A No. 22 IDEAL Boiler and 240 ft. of 38-in. AMERICAN Radiators, costing the owner \$115, were used to Hot-Water heat this cottage.



A No. C-241 IDEAL Boiler and 555 ft. of 38-in. AMERICAN Radiators, costing the owner \$250, were used to Hot-Water heat this cottage.

At these prices the goods can be bought of any reputable, competent fitter. This did not include cost of labor, pipe, valves, freight, etc., which installation is extra and varies according to climatic and other conditions.

Prices are now so attractive that no one can longer afford to put up with the nuisance or run the risks of old-fashioned heating methods. Tell us kind of building you wish to heat—old or new—farm or city—inquiries cordially welcomed—and put you under no obligation to buy. Every prominent architect and every heating engineer recommend exclusively the IDEAL Boiler and AMERICAN Radiator. They cost no more than inferior apparatus. Accept no substitute.



IDEAL Boilers and AMERICAN Radiators keep a new house new and cause an old house to have its life and value prolonged.

Showrooms in all large cities

AMERICAN RADIATOR COMPANY

Write to Dept. 6 CHICAGO

the oven or boiler. The process of making a syrup is very simple, but there are a few points that must be observed if syrup and fruit are to be perfect. Put the sugar and water in the saucepan and stir on the stove until all the sugar is dissolved. Heat slowly to the boiling point and boil gently without stirring. The length of time that the syrup should boil will depend upon how rich it is to be. All syrups are better for boiling from ten to thirty minutes. If rich syrups are boiled hard, jarred, or stirred they are apt to crystallize. The syrup may be made a day or two in advance of canning time. The light syrups will not keep long unless sealed, but the heavy syrups keep well if covered well.

USE OF THE SYRUP GAGE.

The syrup gage is a graduated glass tube, with a weighted bulb, that registers from 0 deg. to 50 deg., and that is employed to determine the quantity of sugar contained in a syrup.

If this gage is placed in pure water the bulb will rest on the bottom of the cylinder or other container. If sugar be dissolved in the water; the gage will begin to float. The more sugar there is dissolved in the water the higher the gage will rise. In making tests it is estimated that the syrup should be deep enough to reach the zero point of the gage. If a glass cylinder holding about half a gill is filled to about two-thirds its height, and the gage is then placed in the cylinder, the quantity of sugar in the syrup will be registered on the gage.

Experiments have demonstrated that when sugar is dissolved and heated in fruit juice, if the syrup gage registers 25 deg., the proportion of sugar is exactly right for combining with the pectin bodies to make jelly. The syrup gage and the glass cylinder must both be heated gradually that the hot syrup may not break them. If the gage registers more than 25 deg., add a little more fruit juice. If, on the other hand, it registers less than 25 deg., add more sugar. In making syrups for canning and preserving fruits, the exact amount of sugar in a syrup may be ascertained at any stage of boiling, and the syrup be made heavier by adding sugar, or lighter by adding water, as the case demands.

CANNED FRUIT COOKED IN THE OVEN.

This method of canning fruit, in the opinion of the writer, is the one to be preferred. The work is easily and quickly done, and the fruit retains its shape, color, and flavor better than when cooked in the preserving kettle.

Cover the bottom of the oven with a sheet of asbestos, the kind plumbers employ in covering pipes. It is very cheap and may usually be found at plumbers' shops. If the asbestos is not available, put into the oven shallow pans in which there are about 2 inches of boiling water.

Sterilize the jars and utensils. Make the syrup; prepare the fruit the same as for cooking in the preserving kettle. Fill the hot jars with it, and pour in enough syrup to fill the jar solidly. Run the blade of a silver-plated knife around the inside of the jar. Place the jars in the oven, either on the asbestos or in the pan of water. The oven should be moderately hot. Cook the fruit ten minutes; remove from the oven and fill the jars with boiling syrup. Wipe and seal. Place the jars on a board and out of a draft of air. If the screw covers are used, tighten them after the glass has cooled.

(To be continued)



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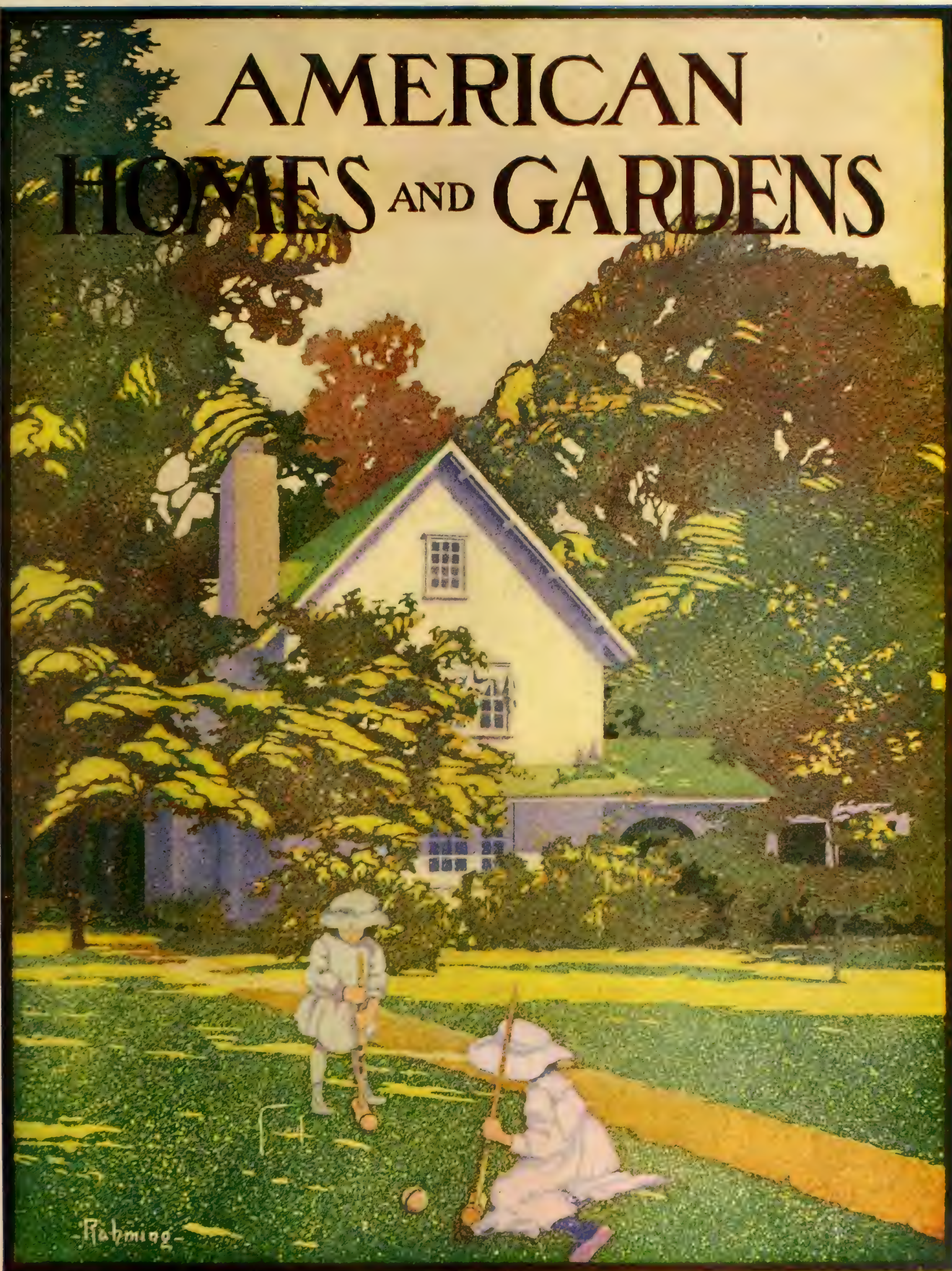
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JUNE, 1910
Vol. VII, No. 6

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In another test a Ralaco ran continuously for 6½ days—24 hours each—never missing an explosion, with no attention except the replenishing of the fuel and oil supplies. Understand that there were absolutely no spare parts aboard the boat when this test was made.

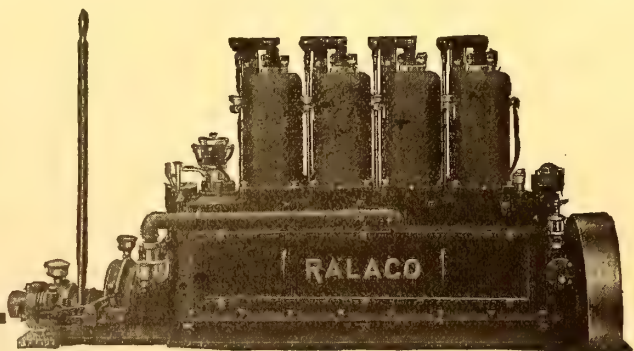
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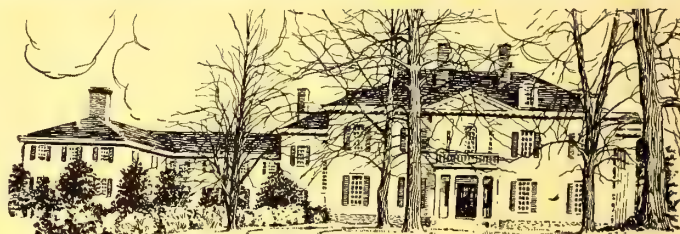


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Address Department I

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& RUBBER CO.**

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Residence of Mr. Edgar T. Scott, Lansdowne, Pa. Horace Trumbauer, Architect, Philadelphia. Equipped with special built-to-order McCray Refrigerator illustrated at bottom of this ad.

MCCRAY BUILT-TO-ORDER REFRIGERATORS are the final expression of convenience and economy in *sanitary* refrigeration. When properly planned for in advance, as in the case of Mr. Scott's Refrigerator, here illustrated, they become an integral part of the structure of the building. Mr. Scott's Refrigerator is lined with opal glass, is arranged for outside icing, and finished to match the adjoining woodwork. It embodies exclusive principles of construction which are carried out in all

MCCRAY Refrigerators

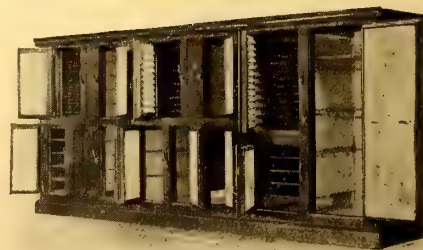
whether built to order, or one of the regular family sizes. Many styles of the McCray Refrigerator are very moderate in price, and all have exactly the same *food-keeping properties* as the more elaborate built-to-order styles. The difference is in finish and materials alone. *Every McCray Refrigerator* is designed to supply *fresh, dry* air constantly to every food chamber—it keeps foods *fresh* as well as *cold*.

WRITE FOR THE FREE BOOK—"How to Use Leftover Foods"—by Elizabeth O. Hiller and for any of these free catalogs:—No. A. H. Built-to-order for residences; No. 87 regular sizes for residences; No. 67, for Groceries; No. 59, for Meat Markets; No. 48, for Hotels, Clubs and Institutions; No. 72, for Flower Shops.

**McCRAY
Refrigerator Co.**

87 Lake Street

KENDALLVILLE INDIANA



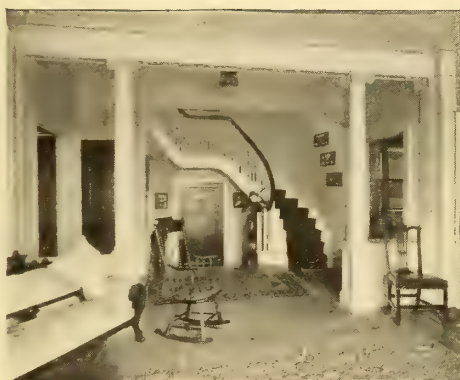


Q Much of the charm of the old Colonial room was due to the prismatic rays of the cut crystal together with the soft light of the candle or lamp. This same quality, in a lamp of this kind, is just as valuable to-day when lighted with the more modern illuminant—electricity.

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THE ivory white enamel used on the standing woodwork of this hall, together with the rich mahogany stain for hand rail and doors provides an ideal setting for quaint mahogany furniture.

Inexpensive soft wood can be properly used under enamel, thus reducing the total cost of the house. The selection of the wood and its finish should be early determined, as the treatment of the woodwork is the foundation of all color schemes. The stains, enamels and finishes of Murphy Varnish Company suggest artistic and beautiful effects in decoration.

Write Margaret Greenleaf, Consulting Decorator of Murphy Varnish Company. She will make suggestions, illustrated by wood panels finished to harmonize with the color scheme which the Department of Decoration will supply to you upon request. This is expert service. Samples of wall covering and drapery materials are included. Send your plans today. Your house is individually considered. The scheme is made for you and the service is free.

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If you wish to take advantage of our very **low prices**, we must have your order **not later than July 1st**, as we import Bulbs to order only. They need not be paid for until after delivery, or taken if not of a satisfactory quality. (References required from new customers.)

Our import price-list, the most comprehensive catalogue of Bulbs published, is now ready and may be had for the asking.

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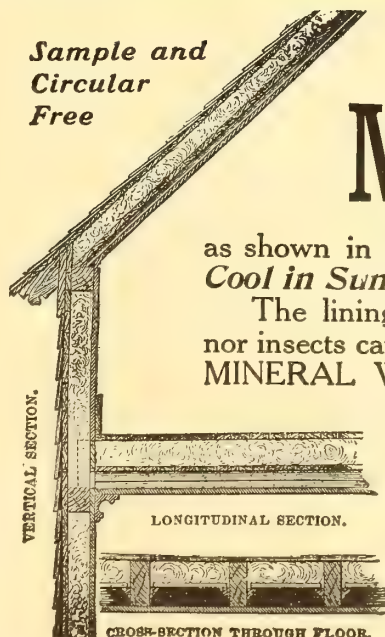
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as shown in these sections, is *Warm in Winter, Cool in Summer*, and is thoroughly DEAFENED.

The lining is vermin proof; neither rats, mice, nor insects can make their way through or live in it. MINERAL WOOL checks the spread of fire and keeps out dampness.

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(Name of Agent or Broker.)

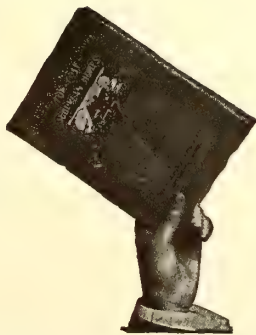
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STATEMENT JANUARY 1, 1910

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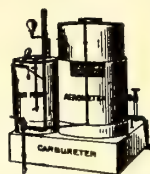
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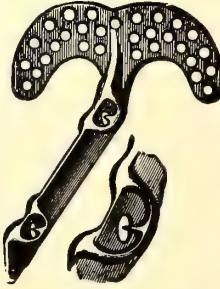
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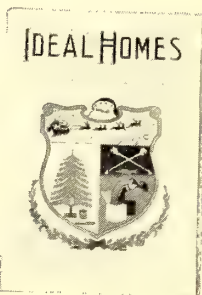
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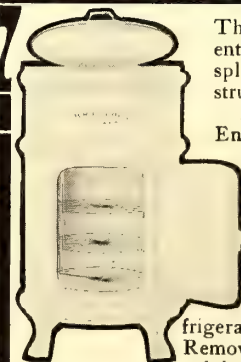
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THE EDITOR'S NOTEBOOK

AMERICAN HOMES AND GARDENS' GARDEN COMPETITION FOR 1910

DURING the past twenty years, in traveling throughout the country, the Editor has had an opportunity to observe the rapid progress which has been made in the embellishment of the home grounds and the garden about the house.

Twenty years ago the average house owner who had a small place in the suburbs or in the country, and had but a limited amount of money to spend upon it, would be planning how to build a bay-window on the parlor, or how to add a porch to the front or side of the dwelling, as the case might be. As a rule, the money was spent in this direction without any material addition to the artistic value of the house, the alteration frequently being a detriment.

To-day the bias toward the house has changed, for the housewife with a workman to assist can be found during the warm days of early spring, building flower beds and planting trees here and shrubs there, as the fancy may dictate, thereby not only creating a picture frame for the house, but adding a value to it that cannot be possibly obtained for anything like the amount of money invested in any other way.

It may be fair to say that the progress which has been made in the beautifying of the home grounds in the past two decades is largely due to the force and amount of criticism that has been brought to bear by magazines of the class of *AMERICAN HOMES AND GARDENS*, and which literature has been the means of substantially checking the rivalry between the house and the garden, until each has been recognized as equally necessary in the maintenance of the equipoise and balance of improved suburban property, small or expensive, modestly or pretentiously treated.

An all-around look over the horizon of gardens throughout the country shows that an effort to obtain a better development of the house plot has been stimulated by the prize garden competition which closed September 15, 1909, and formed the subject of a series of interesting and instructive articles appearing in our columns during the past few months. The last to be published is presented in the current issue. At its conclusion the donors are so much impressed with the wide interest manifested by our readers in the series, that they have decided to institute another garden competition for 1910 and to offer a prize of \$100 for the four best planned and developed suburban and village gardens. The specific scope of this competition is the preparation of articles on "The Planning and Developing of Suburban and Village Gardens," accompanied by sketches, diagrams and photographs; the sole object is to further a love for gardening in America, particularly in suburbs and villages. We want our readers to help us so that we can assist others to beautify their surroundings. There are many people who would like to improve their garden conditions, but are unable to do so from the lack of knowledge, and this is the reason that we want your co-operation and

your assistance. It makes no difference whether your garden be naturalesque or formal, English, Japanese, French or Italian, a rock garden or a rose garden, it will be judged solely on its merit as the successful presentation of a particular arrangement of results.

If you have an attractive garden, send in one or more photographs with a plan or a description of it. In these days almost everyone has a small camera and if you have one, take some photographs of your garden from time to time during the summer, showing the progress of the various plants and their gradual development. If you have no camera borrow one from a friend and make the pictures. Make a rough sketch of the garden, showing the position of the plants and their relative arrangement to each other. Tell the story of the garden's success in your own way. Where it is found difficult, even by one who has the garden habit, to present in the text the full floral beauty of design and reach of culture displayed in his acre or any part of it, he has the art of photography to render outline, tone and body nearly as well as it would be perceived if one were upon the spot. So the literary value of the written description or the technical perfection of the plans or photographs will help you only so far as a good presentation of the garden helps the judges to understand the problem and its solution.

The Editor when traveling through England some few years since took particular notice of the manner in which the garden was developed in small villages throughout that country, and he found that the love for the beautiful did not rest with the wealthy class or the middle class, but was deeply instilled into the hearts of the men of most modest means. He found that these people delighted in flowers and that this feeling for them found its expression in the way in which they used them. There were flowers everywhere. Vines clinging to the walls of the cottage, crimson ramblers trailing over the front doorway, flower boxes built in the windows and sills for the use of plants, trees and shrubs planted over the lawn. Wherever the space permitted, a garden was built at the rear of the house, and planted with all the various kinds of flowers in artistic profusion.

Having this in mind, the Editor feels that there are almost endless possibilities in a small house plot in this country and that something ought to be done to stimulate the suburban house-owner to embellish what little land he may have and add not only beauty to his own possession, but a charm to the whole general surroundings of the place in which he lives. He apprehends that despite the fact that our gardens are sufficiently ornamental in themselves, they are isolated and bear no general relation to each other as do the gardens of Europe. England, for example, may be considered as a single continuous garden. Hence each possessor of a home should so design his garden as to harmonize with those around him, and we trust that he will not only contribute but receive valuable suggestions from the forthcoming garden prize competition.



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Are built complete in sections convenient for shipping and handling. They are erected at our factory, so everything fits, and all sections being numbered, the assembling of the cottage is a very simple matter. Anyone with a helper can easily erect one in a few hours.

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COATING ROOFS WHITE TO REPEL HEAT RAYS

BY A. J. JARMAN.

THE almost general practice of painting the metal covering of the roofs of houses with the red or chocolate-covered oxide of iron, is one of the causes of the insufferable high temperature of top rooms or attics during the summer months. Although good as a covering for metal, this paint because of its color absorbs the heat rays and conducts the heat to the interior. The roof-covering material is not always metal. If tar paper or tar felt and gravel have been used, no kind of white paint will retain its color upon them. If the covering is zinc, this metal is apt to prevent the adherence of paint, particularly when new. Although white paint made with oil and driers can be used upon a roof previously covered with chocolate-colored paint, another material must be used for a tar and gravel roof. To secure a thoroughly adhesive coating upon new zinc, brush over the metal the following mixture: Sulphate of copper two ounces, chloride of copper two ounces, sal ammoniac two ounces, water one gallon. When the salts have become dissolved, add two ounces of spirit of salt (common hydrochloric acid). Allow this to dry upon the zinc for about twenty-four hours, when it will be found that any kind of oil paint will adhere perfectly to the zinc.

For a tar roof, use a freshly-made mixture of lime wash, moderately thick and hot. Two coats of this will adhere firmly to the tar, and retain its white color, as well as becoming very hard and resisting rain without washing off. If the lime mixture has become cold, the hardening property will be lost. In that case, to every pailful add a double handful of common salt. Stir in well until dissolved.

PAINT FOR THE PROTECTION OF CEMENT FROM ACIDS

IN the preparation of such a paint, take pure asbestos, pulverized as finely as possible, and mix it with a solution of silicate of sodium, as alkaline as possible. The asbestos is first rubbed up with a small quantity of the silicate until a dough-like mass is obtained, which is preserved in well-closed vessels. Before use, this paste must be thinned down with the silicate solution, until a sort of paint is obtained, 2 to 3 coats of which will protect the walls of the reservoir, etc., from acids, either solid or fluid. The mass may also be employed for coating sandstone.

ALCOHOL Its Manufacture Its Denaturization Its Industrial Use

The Cost of Manufacturing Denaturated Alcohol in Germany and German Methods of Denaturization are discussed by Consul-General Frank H. Mason in *Scientific American Supplement* 1550.

The Use, Cost and Efficiency of Alcohol as a Fuel for Gas Engines are ably explained by H. Diederichs in *Scientific American Supplement* 1596. Many clear diagrams accompany the text. The article considers the fuel value and physical properties of alcohol, and gives details of the alcohol engine wherever they may be different from those of a gasoline or crude oil motor.

In *Scientific American Supplement* 1581 the Production of Industrial Alcohol and its Use in Explosive Motors are treated at length, valuable statistics being given of the cost of manufacturing alcohol from farm products and using it in engines.

French Methods of Denaturization constitute the subject of a good article published in *Scientific American Supplement* 1599.

How Industrial Alcohol is Made and Used is told very fully and clearly in No. 3, Vol. 95, of the *Scientific American*.

The most complete treatise on the Modern Manufacture of Alcohol, explaining thoroughly the chemical principles which underlie the process without too many wearisome technical phrases, and describing and illustrating all the apparatus required in an alcohol plant is published in *Scientific American Supplements* 1603, 1604 and 1605. The article is by L. Baudry de Saunier, the well-known French authority.

In *Supplements* 1607, 1608, 1609 we publish a digest of the rules and regulations under which the U. S. Internal Revenue will permit the manufacture and denaturation of tax free alcohol.

A comparison of the Use of Alcohol and Gasoline in Farm Engines is given in *Scientific American Supplements* 1634 and 1635 by Prof. Charles E. Lucke and S. M. Woodward.

The Manufacture, Denaturing and the Technical and Chemical Utilization of Alcohol is ably discussed in the *Scientific American Supplements* 1636 and 1637 by M. Klar and F. H. Meyer, both experts in the chemistry and distillation of alcohol. Illustrations of stills and plants accompany the text.

The Sources of Industrial Alcohol, that is the Farm Products from which alcohol is distilled, are enumerated by Dr. H. W. Wiley in *Scientific American Supplements* 1611 and 1612 and their relative alcohol content compared.

The Distillation and Rectification of Alcohol is the title of a splendid article by the late Max Maercker (the greatest authority on alcohol) published in *Scientific American Supplements* 1627 and 1628. Diagrams of the various types of stills in common use are used as illustrations.

In *Scientific American Supplement* 1613 the Uses of Industrial Alcohol in the Arts and in the Home are discussed.

Any Single Number of the *Scientific American* or *Supplement* will be sent for 10 cents by mail. The entire set of papers above listed will be mailed on receipt of \$2.00.

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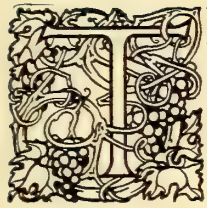
MUNN & COMPANY, Inc., 361 Broadway, New York City

IT has been decided, after an experiment extending over two years in the Place de la République, one of the busiest squares in Paris, to adopt the method of the laying of wood pavement which has been tested, along the entire length of the Rue de Rivoli. The process in question, which is the invention of M. Managnan, consists in a preliminary treatment of the wood blocks to give them the qualities of suppleness and strength. The wood is heated to a temperature of 80 deg. C. in a special bath, containing alkaline carbonates, and wood tar. By this treatment it loses 20 per cent. of water and 10 per cent. of solid matters of various kinds, and there remains a timber, the density of which has been increased by 40 to 50 per cent. The new material prepared in this way avoids the necessity of repairs for two years at least, which, in Paris, entail a cost of not less than 30 cents per square meter annually.

Garden Competition for 1910



The Garden in Your Town



THE publishers of American Homes and Gardens desire to announce a Garden Competition for 1910, and will offer \$100 for the four best planned, developed and successful suburban or village garden. The Garden Competition Editor of American Homes and Gardens wants to know if your garden is a success. If so, write and tell him about it. Tell him how you planned and how you planted your garden, and what success you had with it; tell him of the plants with which you had the best results and the ones which were failures; how you arranged for a succession of bloom; how you made use of the natural limitations of the plot and what mistakes you made. We want you to help us so that we may help others to beautify their surroundings, for this is the object of this competition. You need not be a skilled writer to tell the story of your garden success. Tell it in your own way.

\$100.00 for Prizes

For the best garden received we will pay :

For the first	-	\$50.00	For the third	-	\$15.00
For the second		\$25.00	For the fourth		\$10.00

Conditions

Competitors for the prizes must comply with the following conditions :

- 1 A general description of the garden, consisting of not more than fifteen hundred words, giving the size of the plot and the kind of plants used in planting, must be submitted. Give any details which you think will be of interest.
- 2 Drawings of the plot are to be made in black and white, drawn to the scale of eight feet to an inch, showing the position of the various plants and shrubs. Name each variety of plant on the plan by a number, giving a separate list with a corresponding number by which each plant may be identified.
- 3 Photographs of the garden must be submitted. It will be of interest to send as many photographs of the garden, taken from as many points of view and at different times in the summer, as illustrate the changes in the garden's appearance to the dominance of certain flowers. The photographs must be printed on printing-out paper and are to be not less than five by seven inches in size. A photograph of the site of the garden before it was developed would add interest to the series.
- 4 Descriptions, drawings and photographs are to be marked with a pseudonym which is to be enclosed in a sealed envelope containing the name and address of the competitor. All descriptions, plans and photographs are to be sent free of any name or address on them except the pseudonym. Express or postage charges must be fully prepaid.
- 5 Just as soon as the judges have rendered a decision upon the four best gardens submitted for this competition, they will notify the Editor who will open the envelopes bearing the pseudonym and containing the competitor's true name, and will at once notify the successful competitors that they have won the prizes.
- 6 The Garden Competition Editor reserves the right to publish in American Homes and Gardens all prize gardens and those gardens which in the opinion of the judges are worthy of honorable mention. The names of those whose gardens are reproduced will be published with the photographs.
- 7 Contributions are to be submitted to the Garden Competition Editor, American Homes and Gardens, Munn & Co., Publishers, 361 Broadway, New York.
- 8 The garden competition closes September 15, 1910. Contestants need not to be subscribers to American Homes and Gardens, and no charge or consideration of any kind is required. No photographs, manuscript or plans will be returned.



HE magnificent country estate of the late George Crocker is now for sale. "Darlington" is situated in the charming hill country of Northern New Jersey, comprises about eleven hundred acres and offers a rare combination of mountain, wood and stream, with broad expanse of fertile field and artistic residential park. On the north and east lies the well-known Havemeyer Estate; beyond it, the village of Suffern, and a little farther on, Tuxedo. Good roads radiate in all directions and the property is easily accessible by motor or by the Erie Main Line (Ramsey station, 3 miles; Suffern, 5 miles) ¶ While nature has been very lavish here, the late owner spared neither expense nor time in improving and beautifying the surroundings, crowning the whole by the erection of one of the most noteworthy private residences in America. The residence is modeled largely after a famous English manor house of the Elizabethan period, and was completed in 1908. The material is Harvard brick with trimmings of Indiana limestone. It stands on a lofty ridge overlooking a large part of the estate and commands an outlook for miles in all directions, including the picturesque Ramapo valley and mountains.

THE interiors are remarkable for beauty and splendid proportions. The richly carved woodwork is chiefly of English oak, Circassian walnut and California redwood. Caen stone and marbles are also used in profusion, and decorations are the work of artists of high repute. The Entrance Hall with its monumental open staircase is a fitting introduction to the stately interior, but the most impressive feature of the entire house is the magnificent Great Hall, twostories in height with oak-carved gallery and walls of Caen stone. The fittings of this great room are unusually striking and suitable, including a large built-in pipe organ, extraordinary rugs, hangings and furniture. Here and in other rooms are numberless art treasures in bronze, silver, porcelain, wood, ivory and needlework. There are paintings by great masters, tapestries and embroideries with histories and of great value. There is a remarkable collection of Chinese porcelains, some of which are displayed in electrically lighted, built-in cabinets. Throughout the house are many pieces of genuine antique furniture, as well as costly reproductions. Grouped about the Great Hall are Dining Room, Breakfast Room, Library, Drawing Room, Office, etc., each superb in appointments and decorations.

¶ On the second floor, surrounding the gallery that overlooks the Great Hall, are Master's and guest chambers, generally furnished and decorated in perfect English style and each with large bath room connection. Above these are more and equally attractive guest chambers and other rooms. An electric elevator supplies access to all floors. The construction throughout is practically fireproof.

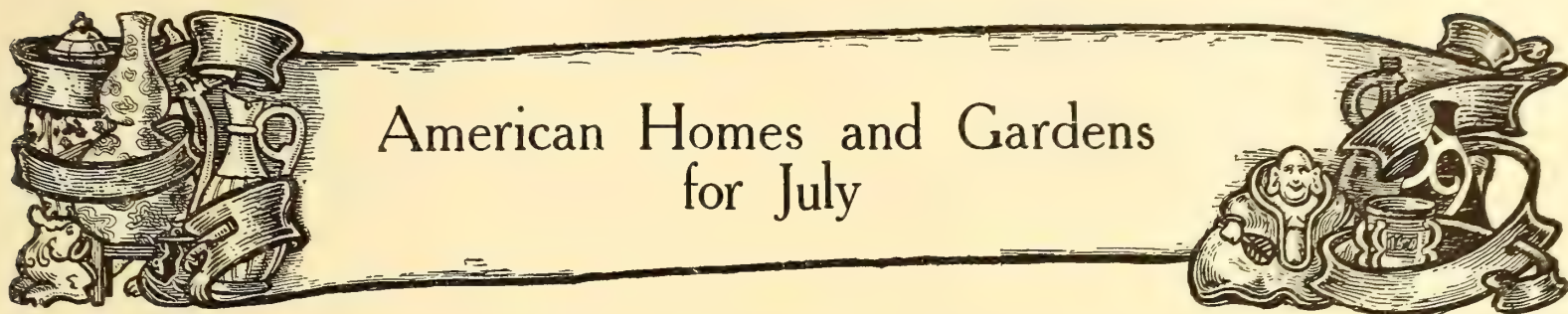
THE grounds about the mansion are spacious and highly ornate. Illustrations give but faint suggestion of the beautiful terrace front with its grassy slopes, broad stone stairways leading to the mirror pool, or of the extensive vine covered pergolas and pavillions, and the no less beautiful entrance front about which are grouped a wealth of evergreens, box trees, Japanese maples, flowering plants and shrubs. On this front of the house and on the nearby wooded slopes and drives are many thousands of rhododendrons. Beyond the lawns are the extensive formal gardens with large fountain pool, then the green-houses of extraordinary size and completeness, filled with choice flowers and rare fruiting vines and trees. An abundance of pure water from an artificial mountain lake (a part of the estate) has been piped to every desirable part of the grounds and into every building, with ample pressure and equipment for fire protection. The lake is a well-stocked trout preserve. In addition to the residence and green-houses are the following buildings, all in good condition: Old residence and green-houses, gardener's cottage, superintendent's cottage, carpenter's cottage, garage, assistant gardener's cottage, four double houses for employes, dairy cottage, lodge house, two small houses on mountain lands, chicken house, ice houses, coach, cow and hay barns, silo and grist mill, bull barn, watchman's cottage, blacksmith shop, carpenter shop, granary laundry and water works. Included in this offering is a choice herd of about 70 head of Jersey cattle, carriages, horses, chickens, a complete equipment of up-to-date implements, tools, stone crusher, etc., as well as the entire contents of the mansion and outbuildings, with minor reservations.

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There is no part of garden architecture which offers a greater field for classic ornamentation than that presented in the designing of a fountain. From time immemorial the fountain has been accepted as one of the necessary accessories for a formal garden, and it is a key by which the whole general scheme of the garden is obtained. The group of fountains presented herewith is well described by Ralph DeMartin, in a very pleasing story, and these are representative fountains as seen in some of the important gardens in this country.

The Fireless Cooker

Monica Bastin tells in an interesting and practical manner how to make a fireless cooker and how to use it. She explains an economical way by which cooking may be done without the continued use of a coal fire, which simplifies the method of cooking and at the same time reduces not only the expense but also the intense heat incident to the continual use of the kitchen range during the heated term of the year. The article is illustrated with views showing how the fireless cooker can be made.

Furniture for the Home

The third paper by Esther Singleton will be devoted to porch furniture. The porch of the small house frequently finds itself the resting place for various kinds of chairs removed from different parts of the interior rooms. This condition is unfortunate for it not only disfigures a house but is one that can be avoided by a very small expenditure of money. Miss Singleton tells how this may be done, gives the cost and provides illustrations showing the kind of furniture that is appropriate for the purpose.

"Fouracre"

The summer home of the late A. J. Cassatt, at Bar Harbor, Maine, is considered to be one of the most important houses at this delightful watering place. The house is splendidly illustrated by many fine photographs taken especially for this magazine, and is well described by an article prepared by Barr Ferree in a thoroughly competent manner.

Decorations and Furnishings for the Home

The fifth paper by Alice M. Kellogg is devoted to the use of vases for the home. The article which is profusely illustrated shows the kind of vases used and how and where to use them, for the decorating of the drawing-room table as well as for the hall, the living-room and the dining-room. It tells how to purchase them and prices are given wherever it is possible to do so.

Automobiling

The various ways by which an automobile may be used either by the small truck farmer, the general farmer, the dairyman or the country gentleman is well explained in an interesting article by Walter Langford, with illustrations showing how the automobile has come to be the necessary complement of vehicles that are in use in country life to-day.

A House in Massachusetts

Mary H. Northend describes an interesting house built for J. W. Buhlart, at Wenham, Mass. Photographic views of the exterior and interior and copies of the floor plans give a thoroughly complete presentation of this interesting house.

Some Modern Homes

The highly interesting group of houses presented in an article by Paul Thurston is well illustrated, showing views of the interior and exterior of the houses and the floor plans. The illustrating of these houses ought to be of service to the home-seeker who desires to build a moderate priced house.

Ornamental Bedding Plants for Hedges

Usually one likes to separate the flower garden, the vegetable garden or the service part of the house from the lawn by the use of a hedge of blooming shrubbery, of evergreens and the like. The means of accomplishing this desire is well presented in an article by Ida D. Bennett.

Milk from Tuberculosis Cows

A very interesting and timely article is one prepared by Frank N. Bauskett, on the use of milk obtained from tuberculosis cows. He states that fifteen per cent. of the people dying of tuberculosis in the District of Columbia is due to milk supplied from cows afflicted with the disease, as announced recently after a few weeks' investigation by the federal inspectors under the Department of Agriculture.

Yama-no-uchi and Its Trout

Carlyle Ellis has prepared an article on the trout at Yama-no-uchi, the country home of Mr. Frank Seaman in the Catskill Mountains. The story is an interesting one and is illustrated by many fine engravings.

The Mulberry

The mulberry has not been cultivated extensively of late years, but E. P. Powell, in a very interesting article, tells of some of the values of this delicious fruit.

Handicraftsman

Sally Field Stevens has prepared an article on "An Amateur Bird House," which tells how to build a bird house. The article is illustrated, showing how a bird house can be built, and also with a photographic view showing it in a completed form.



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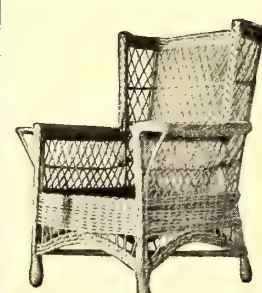
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CONTENTS FOR JUNE, 1910

	PAGE
COVER DESIGN	By M. R. Rahming
THE TERRACE AT THE GARDEN FRONT OF THE HOUSE	Frontispiece
RESIDENCE OF FREDERICK CULVER, ESQ., Hadlyne, Conn.	By Francis Durando Nichols 215
THE HANDICRAFTSMAN—Home-Made Concrete Flower Urns.....	By J. E. Lloyd 220
CONCRETE COPINGS FOR GARDEN WALKS.....	By John J. Heinze 221
"THE SUMMER LODGE"—Built, Furnished and Equipped with Garage, Automobile and Motor Boat for \$2,000.....	By Esther Singleton 222
DECORATIONS AND FURNISHINGS FOR THE HOME. IV. Fitting up the Porch. By Alice M. Kellogg	229
A SUBURBAN HOUSE IN THE MISSION STYLE.....	By Walker and Hazzard 232
SHORT-HORNED CATTLE	By Theodore Langdon Van Norden 234
"FOX HILL LODGE"—The Summer Home of Mr. Prescott Bigelow, at Manchester, Mass., By Mary H. Northend	236
THE HOUSE AND THE GARDEN AT "RACHELWOOD," LAUREL HILL	238
AMERICAN HOMES AND GARDENS' GARDEN COMPETITION. Honorably Mentioned Garden.	239
SOME SMALL HOUSES	By Paul Thurston 243
GARDEN NOTES	By Charles Downing Lay 248
BULB GROWING ON SPONGES	By S. Leonard Bastin 249
HOME-MADE PERFUMERY	By George Ethelbert Walsh 251
GARDEN PESTS	By E. P. Powell 252

Garden Competition for 1910

Editor's Note-Book

American Homes and Gardens' for July

New Books

Correspondence

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The terrace at the garden front of the house

AMERICAN HOMES AND GARDENS



Volume VII

June, 1910

Number 6

Residence of Frederick Culver, Esq., Hadlynnne, Conn.

By Francis Durando Nichols



HERE is more than a promising face stamped upon the outlook as the picturesque and delightfully situated home of Mr. Culver at Hadlynnne greets the eye of the visitor, for the ensemble has an aspect and a form clearly and wholly suited to carry out the conviction that the work has all the visible signs of complete accomplishment. And how soon one realizes that the site chosen for the house is quite the most favorable to be found upon the property; how soon aware that the latter is in a position to be rightly seated within the precincts of so typical a New England village as this on the Connecticut hills—Hadlynnne overlooking the valley of the surrounding country.

The house and the garden are the work of Charles A. Platt, the well-known architect of New York City, and, like all his creations, they have a personal charm which is seldom found in houses and in grounds even of a more pretentious type. The dwelling is neither small nor large; but the simplicity and dignity which it possesses in all the detail are the simple expression of the art of the designer as he wished to see it when completed. The house is, however, a studied one, inasmuch as every advantage has been made of the natural surroundings, the elements of which determined the position of the building and also the style of architecture in which it was to be built.

The house is reached from a fine avenue that approaches it through grounds laid out in excellent taste, with just



The entrance front of the house

enough of the landscape work that was needed to keep them in harmony with the natural beauties of the property. The avenue leads directly to the front entrance of the house, sweeping around a circle in front of the entrance and making a detour to the stable and the highway.

A great rough stone step is placed in front of the doorway. The entrance, which is of classic design, has a trellis built on either side of the doorway, and on which are growing crimson ramblers.

The house has a rough stone foundation and a superstructure of frame construction, the exterior of which is covered with hand-hewn shingles, painted white. The roof is covered with shingles, and finished natural.

The hall, which occupies the center of the house, and which opens direct into the living- and dining-rooms, has a beamed ceiling, and massive columns supporting an archway built over the staircase and the vestibule. The cypress woodwork is stained and finished in a soft brown color.

The stairs are built in a simple manner, with one of the columns forming a newel post.

The living-room is spacious in its proportions. The principal feature of the room is the broad, open fireplace and chimney-hearth, with its paneled mantel and over-mantel finished with fluted pilasters which extend from the floor to the ceiling. A massive wooden cornice extends around the room at the intersection of the walls and the ceiling.

The dining-room is trimmed with cypress, finished in a soft brown tone. It has a paneled wainscoting to the height of four feet, at which point the walls are covered with a Japanese grass cloth of a golden brown tone, in charming agreement with the color scheme of the woodwork.

From the dining-room a door leads directly to the serving-room and the pantry, which also have a direct connection with the kitchen.

The kitchen wing is devoted entirely to the service part of the house, the first story containing the kitchen and the servants' hall, and the second story the bedrooms and bathroom for the domestics. Each of the departments is fitted up with every possible device for the economical use of labor in the performance of the necessary work.

The remainder of the second story of the main house is devoted to the family sleeping-rooms and bathrooms and to the guest-rooms and bathrooms. Each of the

rooms is treated in a simple manner and decorated in one particular color scheme.

There has been much attention given to the interior decorating of the house and the success of it has depended upon a very careful study of the interior rooms and their relation to each other. Mr. Platt had, however, a comprehensive idea as to the scheme which he proposed to carry out, and the resultant effect of this arrangement of color is most harmonious in every detail.

The walls are treated to blend with the color scheme of the woodwork and also to form a background or a setting for the furniture chosen for each of the rooms, and for the draperies and hangings selected for the windows and doors.

Only such pieces of furniture have been provided that are absolutely necessary, and they have been very carefully selected.

Several of the bedrooms have open fireplaces which are built of of red brick laid in white mortar with wide mortar joints. The hearth and facings are built of a similar brick laid in a similar manner, and the whole is furnished with mantels designed in the Colonial style.

All of the bedrooms have large clothes closets, well fitted up, and so arranged as to receive as much light and ventilation as is possible. The bathrooms, already mentioned, are furnished with a wainscoting of white enamel tile, finished with a molded base and cap, and a floor paved with unglazed tile of hexagon form. These bathrooms are provided throughout with

porcelain fixtures and exposed nickel-plated plumbing.

One of the prominent charms of the house is its extreme simplicity. There is a feeling that symmetry dominates the entire design of the building and its arrangement, that the plans are pleasing and designed for convenience—the whole producing an unpretentious and intimate smoothness in the general character of the building. The plan of the house is not what would be considered romantic, but is rather that of the classic form, with a central hall of generous proportions forming a complete separation between it and the subsidiary rooms.

The living- and dining-rooms open onto the pergola and terrace which extends along the rear of the house, connecting the two porches built at each end of the building.

The Italian pergola has been well used in the designing



The front doorway



The terrace wall at the rear of the house

of this house, and it has been made an important part of it, in its construction as well as for its decorative value. In the planning of a pergola one should not lose sight of the

fact that it must be designed in some architectural form that will be pleasing and at the same time form a component and harmonious part of the house to which it is to be attached.



The garden

This is what Mr. Platt has been able to do by a careful study of the house and the pergola as shown in the engravings presented herewith.

The columns used for the support of the crossbeams are fluted and are of the style of the Doric order. These columns supporting the beams and cross rafters are partially hidden from view by the vines and climbers, which are clinging to it and which appear to the best advantage when the glimmering light and shade play along the covered way.

By this treatment the pergola forms a partial screen from the sun's rays, and a temporary shelter in summer, while in the early winter, when nature responds to her call and the leaves fall from the vines, the pergola is left in its natural form, thereby permitting the sunshine and light to enter the rooms of the first story which could not be obtained if a covered piazza had been built along the exterior of the house as is usually done when an out-of-door living-

room is required. A sufficient portion of the pergola, however, that part which is built at each end of the house, is covered with a permanent roof and affords ample space, under shelter, for living out of doors when the weather permits.

The floors of the terrace and the porches are paved with unglazed red Welsh tile and brick, laid in a simple manner and in such a way as to present an air of age. Massive tubs filled with Oleander are placed between each of the columns along the edge of the terrace. The terrace and the porches overlook the bowling green, which is held in place by the massive stone wall built at the rear of the house. From this terrace broad vistas are obtained of the Connecticut hills and the sur-

rounding country in the distance. Large tubs filled with flowering Hydrangea are placed at stated intervals along the terrace wall adding a touch of color to the landscape.

The problem of developing the grounds has been well



The hall



The living-room

solved, by the building of an old-fashioned garden on an axis with the main house and in perfect harmony with it. It is a delightful old spot with walks passing along through the various beds of flowers, which are growing and blooming in an artistic profusion. The garden as built presents an individuality that is characteristic of its designer. The flower beds are laid out without any set form or plan, are irregular in shape and are planted in a random manner so that when the flowers are in bloom they present a tangled mass of color, which in itself resembles a picture that would be difficult to reproduce in any other way. The main walk, which extends from the house to the extreme end of the garden, is paved with flat stones of irregular form and

The modern garden would not be complete without a sun-dial any more than the garden of our grandmothers, and as this particular spot is not the exception a sun-dial has been set up in an exposed corner facing the house. It is an attractive piece and one that would suggest the following inscription:

"Facing the light, I point above and prove
There is a place no storms nor seasons move;
So hold I steadfast, in their ordered way,
The falling shadows of a fleeting day."

The stable is well placed upon the property and out of sight of the dwelling, and yet not so far away as to be inconvenient. The exterior of the building is designed in



The dining-room

shape, laid in an equally irregular manner. This walk is broken in its length by a pool in which there is placed a fountain. Similar walks paved in a similar manner radiate from this fountain in opposite directions. At the farthest end of the garden a pergola is erected, under which there is built a circular seat.

To the left of this pergola is an interesting summer house planned especially for the enjoyment of the garden in inclement weather, and is so arranged as to form a protection when one is sitting within its enclosure.

There is also a simple garden house built against the wall of the garden, which also forms a protection not only from the sun's rays in summer, but also from the cold wind of the early fall and winter.

harmony with the house and is treated in the same style of architecture.

It contains a carriage room large enough to accommodate all the necessary carriages for use on an up-to-date estate. The stable contains four boxed stalls thoroughly equipped with all the usual ornamental iron fittings.

The entire place commands the attention of all who see it, on account of the fine architectural features of the buildings on the property blending into the landscape, both of which seem to be an expression of the taste and requirements of the owner as carried out by the architect. The masterly way by which the entire property has been developed by avoiding all the usual superfluous ornamentation has been the means of bringing about the successful result.



THE HANDICRAFTSMAN

Conducted by A. Russell Bond

Home Made Concrete Flower Urns

By J. E. Lloyd



HERE is something about concrete which is very fascinating to craftsmen, because the material is possessed of so many latent possibilities. Nothing is more easily worked that is so durable and permanent. It seems odd that one can actually cast stone with much less difficulty than he can make articles of clay; and the beauty of it is that anything may be used as a mold for concrete, thus enabling the amateur to exercise his ingenuity in putting together various receptacles, such as butter tubs, nail kegs, kitchen utensils and the like, to form the molds he desires.

The two concrete urns pictured on this page are the work of Mr. C. La Verne Butler, of Framingham, Massachusetts, who has displayed a great deal of resourcefulness in constructing the molds for these garden ornaments. It would puzzle the average man to devise a mold for the round columns, but Mr. Butler solved the problem by using sections of ordinary stove pipe. The pedestals and capstones were cast in molds framed up with bits of wooden molding of standard design. For the urns, he used a half barrel and a pail.

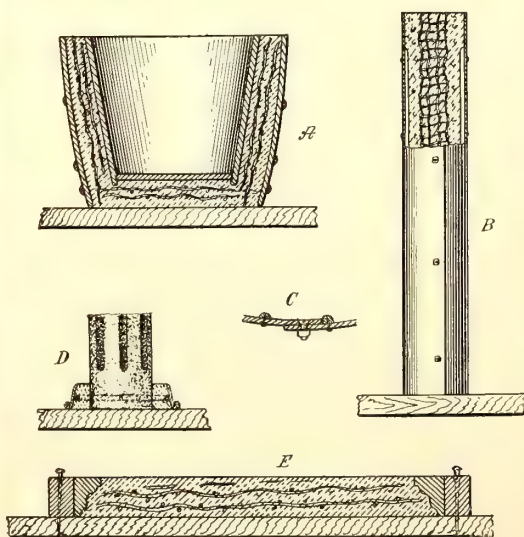
Details of the various molds are shown in the

herring to it. To start with, a layer of concrete was made in the bottom of the barrel on the plank. The proportions used were one part of cement to two parts of clean, sharp sand. By this is meant sand that contains no clay or other dirt, so that when wet the water does not become muddy. The cement and sand were thoroughly mixed in the dry condition and then wet sufficiently to be tamped down easily in the bottom of the barrel. A two-inch layer was first put down, and then it was reinforced with wire. The best material for the purpose is wire lathe of about a half-inch mesh. The wire lathe was then covered with more concrete and a pail was set in the barrel concentrically. A number of stones had to be placed in the pail to keep it from floating up as the concrete was filled in around the sides. The sides were also reinforced with wire.

After the material had stood for about four or five hours, the pail was removed. Had the pail remained in the concrete much longer, the concrete would have set so hard that it would be difficult to remove the pail. It is essential in all concrete work that all cores be of tapered form, so that they may readily be lifted out of the cast, or if not, they should be so constructed that they can be taken apart. The



A five-columned concrete flower urn



Molds used for casting the garden urn. The urn proper was cast in a half barrel, the columns in stove pipe and the capitals in kitchen utensils



Hand-carved three-columned flower urn

line drawing. At A may be seen the mold for the urn. A barrel was sawed in two and the bottom knocked out. This was placed on a level bed of plank, which was well lubricated with linseed oil to prevent the concrete from ad-

ordinary pail is formed with a taper, and, therefore, is just the thing for the core of a mold, provided, of course, it is lifted out as soon as the concrete is hard enough to retain its shape and before it has hardened sufficiently to grip

the core very tightly. Of course, the barrel mold did not form a very attractive urn, and to make an artistic flower urn it was necessary to carve the sides to a certain extent. This required that the half-barrel be removed after the concrete was quite hard, but yet soft enough to be easily worked with the chisel. It was found that if the mold was filled just after noon, the concrete would be sufficiently hard to be worked the next morning at seven o'clock. However, this period of time would vary to a certain extent with the weather. On a wet day it would have to remain in the mold a longer time. The barrel was removed by cutting the hoops and knocking off the staves. This done, the design had to be cut in the concrete within a few hours, because the material soon became too hard to be worked readily. It would be well, therefore, for any amateur who intends to experiment along these lines to have his design well planned out beforehand, so that he can pencil or chalk it on the urn in a few moments, and start to work with chisel and mallet at once. Of course, it is possible to carve

the design in reverse out of wood and tack it to the inside of the barrel, but this will prove a much more difficult task than carving the concrete itself.

At B in our illustration we show one of the columns being cast in a stove-pipe mold. The stove-pipe is joined with small stove bolts, so that it may be removed from the concrete column by unbolting it and spreading it open. It will be observed that the columns of one of the garden urns are fluted. Mr. Butler did this work with a chisel after the concrete had set. However, the work could be simplified by securing strips of wood to the inside of the stove pipe mold by means of small screws, as indicated at C. For the capitals and bases of the columns, small cooking utensils were used, as indicated at D. At E we show the mold for the base of the urn. It will be observed that the side pieces are held to the plank bed with long nails, which are not driven home, but are left projecting slightly, so that they may easily be withdrawn to permit of taking the mold apart when the cast is completed.

Concrete Copings for Garden Walks

By John J. Heinze



HE amateur gardener, in laying out his lawn, usually overlooks the fact that dirt is apt to be washed down on the walk when it rains or when the lawn is sprinkled, giving the grounds an untidy appearance. One method of preventing this is to cut a shallow trench at the edge of the walks, to catch the dirt and water. A better method, and one that will tend to improve the appearance of the grounds, is to place a low coping of concrete blocks on each side of the walks. The accompanying illustrations show a simple method of making collapsible molds for forming these border blocks, also molds for the borders of circular flower beds.

To make the mold for a straight block, use two boards measuring 1 by 5 by 28 inches. At an inch from each end cut a groove 1 inch wide by $\frac{1}{2}$ inch deep, as shown at F in the drawing. For the end pieces, use two blocks, H, measuring 1 by 5 by $3\frac{1}{2}$ inches. Make the base board of any thickness, 8 inches wide by 30 inches long. Near one corner of the base board nail two narrow strips of wood at right angles to each other, as shown at G. These strips of wood serve to square up the mold. All parts of the mold coming in contact with the concrete should be oiled, and after a block is formed, the mold should be wiped with a damp cloth or sponge before a new block is cast.

After the four sides are assembled on the base board and clamped together, as shown at E, the concrete is poured in the mold and tamped. The top of the block is smoothed by scraping off any excess of concrete with the edge of a board. The con-

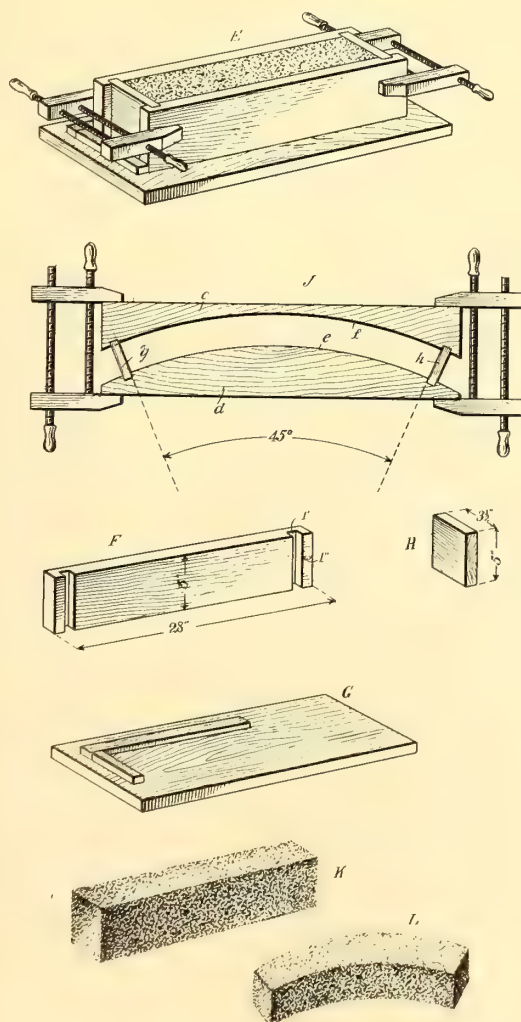
crete mixture should be one part of cement and three parts of sand. It should be just moist enough to cling together when a bit of it is pressed in the hand. In about ten minutes the mold can be taken apart and the block put carefully aside to harden, which takes about forty-eight hours. For the first twenty-four hours the blocks should be slightly moistened occasionally. The blocks are set in the ground with the tops projecting $1\frac{1}{2}$ inches above the walk.

For the borders of flower beds the same method is fol-

lowed, with the exception that blocks c and d, Fig. J, are cut to the arcs e and f. The end pieces g and h cut off an eighth of a circle, and should be set at an angle of 45 degrees, as shown. Of course, the arcs e and f may be varied to suit requirements, and the blocks may subtend a larger or smaller angle; but ordinarily eight blocks to the circle will be found a convenient proportion. The curved blocks can be combined with the straight blocks to border irregular walks and gardens.

If a curved or patterned top to the coping is desired the mold should be filled heaping full and then scraped off with a board cut to the desired pattern.

A simple rectangular flower box may be made with the mold shown at E. A core should be secured to the base board, extending to within two inches of the top of the mold box. The core should taper on all four sides, and the tapering sides should be painted to prevent them from swelling with the moisture. When the mixture has been well tamped in, place a board over the mold and turn the whole upside down, when the base board can be withdrawn and the concrete allowed to harden in the mold.



Collapsible molds for making concrete copings



Fig. 1—A lodge in the wilderness

“The Summer Lodge”

Built, Furnished and Equipped with Garage, Automobile and Motor Boat for \$2,000

By Esther Singleton.



THE problem of how to live with comfort and pleasure during the long summer season strikes with dismay many brave-hearted persons who do not own cottages or country homes. Desirable cottages, moreover, are expensive, and hotel life soon pall upon the homeless wanderers of both days and nights when Sirius shines upon a torrid world.

Suppose a Genie were to appear from the pages of the “Arabian Nights” on your bookshelf and announce that he is able to erect, furnish and establish two or three persons, or even a small family, in a modest but perfectly comfortable house of several rooms, in the heart of the wild wood, or by the shore of lake, stream or river—in such a dwelling, for instance, as those shown in our illustrations, Figs. 1, 2, 3, 8 and 14—within the space of a week. “Delightful, but impossible,” you would probably reply.

The Genie would smile and continue that it is not only possible, but that it has been done several times; and, moreover, he will supply this house, the furniture, a garage, an automobile and a motorboat, all for the small sum of \$2,000; and then he asks if you can suggest anything better for the same amount of money?

“Will you itemize this?” you ask incredulously. “Certainly,” says the Genie. “Look here:

House	\$460
Extra fittings and furniture	575
Garage and boat house	200
Motor boat, eighteen feet long	280
Automobile	485

\$2,000

Now let us see how this can be done. In the first place, you will order a portable house made principally of hard wood, with strong frames, and airtight joints, which is delivered to you in sections. You will order what you please, specifying the number of doors and windows; and when it arrives, with everything completely furnished and fitted, with the plates and diagrams and all the necessary screws and bolts, you will be able to have it put up in a couple of days, by two inexperienced men (perhaps one of them yourself), who will only need a screwdriver, a wrench and a hammer. When it is erected, you can have it painted any shade you please, or you can leave the natural wood to wind and weather, and by putting up a few wooden or wire trellises and planting such a rapidly growing and common creeper, as the



Fig. 2—A summer retreat



Fig. 3—Under the trees

morning-glory, your summer lodge will soon become a charming bower.

Our illustration Fig. 9 shows how the interior appears. The panels can be covered with canvas or burlap and painted any color to suit the taste of the occupant; and panes in the doors give extra light. It must be remembered, however, that when your house is erected, you have but the frame; and, if you care for extra comforts, a little money can be wisely laid out to great advantage. Extra windows and extra doors are perhaps not so necessary as hoods over the back and front door, and a few more feet added to the verandah will always prove a good addition in comfort and appearance. A sink in the kitchen is a necessity, and in the living-room, at least, an open fireplace is more than desirable. In some cases a kitchenette is furnished and supplied with the house for an extra sum, according to the size and furnishing of the latter. As the mosquito has long ago dis-

covered the charms of country life and has taken possession of every wood and strand, wire screens are absolutely necessary.

Extra doors cost each, \$4.50; extra windows, \$4.00; hoods over doors or windows, for each section of three feet (see illustrations Figs. 5 and 6), are \$2.00 each; door screens are each \$3.50, and window screens are each \$2.50.

For our \$460 house we shall need:

Wire-screens for ten windows	\$25.00
Two door-screens	7.00
Shutters, per window, \$3.00	30.00
Screen-door between kitchen and dining-room	3.50
Drop shelf in kitchen ...	2.50
Drop shelf in pantry	2.50
Sink in kitchen	3.50
<hr/>	
	\$74.00

Various models show that pretty cottages can be purchased for from \$450 to \$500. These contain, as a rule, five rooms — living-room, dining-room, two bedrooms, kitchen, pantry and bathroom. In our Figs. 7 and 8 an attractive little house is shown that only costs \$460. A

similar house with one more bedroom can be purchased for \$485.

Fig. 14 represents a house 17x22 feet with four rooms and a six-foot verandah, with roof, and a kitchen extension of 8x11 feet. This cottage can be had in any size.

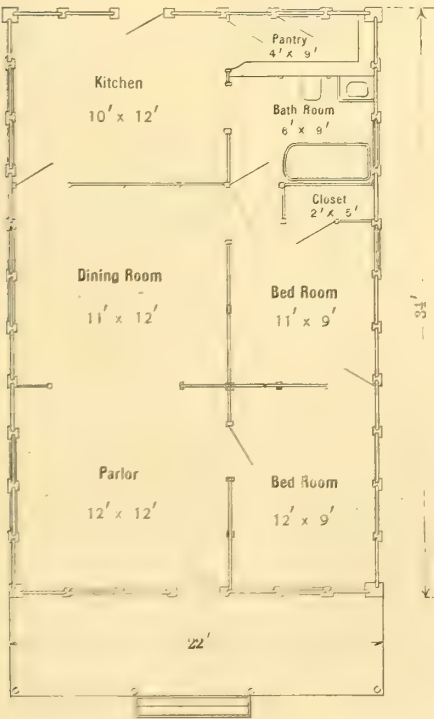


Fig. 7—Floor plan

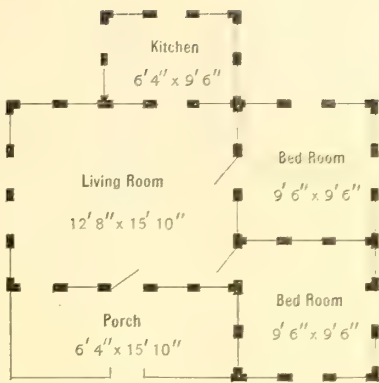


Fig. 4—Floor plan



Fig. 5—Door-hood



Fig. 6—Window-hood



Fig. 8—In the heart of the wild wood

A special six-room cottage, 24x39 feet, with dormer windows and porch, and having a nine-foot ceiling, can be purchased for \$600.

The making of portable houses has become such a large industry that methods of construction, models and floor plans differ widely with various manufacturers. Let us examine a few styles. In the houses made by one firm the floor consists of spruce floor joists framed and fastened together, over which frame is laid a seven-eighths-inch North Carolina pine flooring dressed and matched.

The floor is made in sections, locked together so that the tongue of one section fits into the groove of the other. This prevents cracks in the flooring. The baseboard at the intersection of the side-walls with the floor sections is put up from the outside after the house is erected. It is securely screwed to the walls and also to the floor timbers, thus binding the whole firmly together. The lower edge of the sidewall frame is rabbeted to receive the base, forming a water table, so that the water runs over the outside instead of behind the baseboard. All houses 11x15 feet or less with side-walls not more than seven feet six inches high, are built with each wall in one section and each side of the roof in one section. Two men can easily handle the sections.

The frames for the side and end walls are made of two-inch cypress, the studding being placed fourteen



Fig. 9—An interior of a portable house

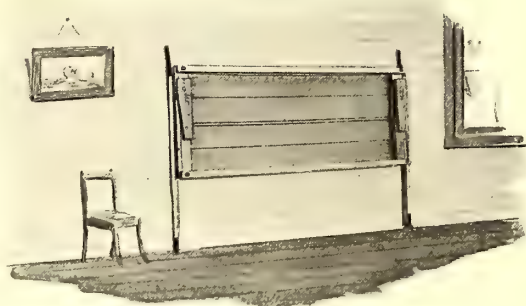


Fig. 10—Folding couch, shut



Fig. 11—Folding couch, open



Fig. 12—Double folding bed open

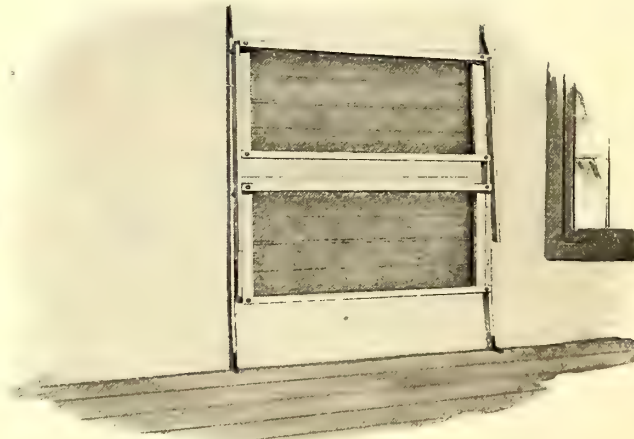


Fig. 13—Double folding bed closed



Fig. 14—A five-room portable house.

inches on centers. The corner joints are so made as to be perfectly air-tight and waterproof, and are fastened together with three four-inch lag screws. Over this frame is stretched Neponsett Red Rope Lining, and over the lining is nailed the cypress or red cedar siding.

The frame for the roof is made and covered just like the frames for the walls. Where the sections meet at the ridge they are capped with a 3x3 ridge pole, which is milled out to fit closely over the ridge boards. This makes a perfectly water-tight joint.

The sides of the roof and the ridge-cap are held firmly in place by the ornamental caps and finials. The rafters of the frame are notched at the lower end to fit the plate or top of the side-walls, and are fastened two feet from the top, inside, with collar beams as truss-work.

The gables above the line of the side-walls are made in one piece and securely fastened to the walls with screws. The roofs drop over the gable into a mortise and tenent. The gables are shingled or clap-boarded as the purchaser pleases.

The window frames are strong and the sashes are fitted tightly. The windows slide up and can be locked with spring fasteners. There is a hinged sash in each gable, which swings in and which is worked from the floor with a pulley and a cord.



Fig. 15

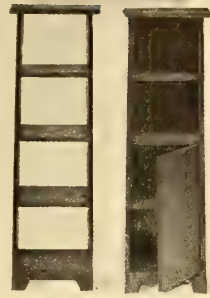


Fig. 16



Fig. 17



Fig. 18

A cottage screen, such as is shown in Fig. 15, can be purchased for \$3.75. A convenient magazine stand, like the one shown in Fig. 16, can be bought for \$6.00. A combined table and chair, such as illustrated in Fig. 17, can be purchased for \$6.25. Fig. 18 illustrates a convenient table for a lamp, which can be purchased for \$15.00.



Fig. 19



Fig. 20



Fig. 21

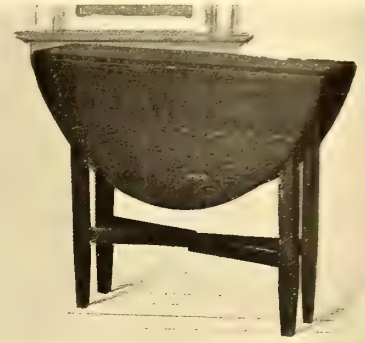


Fig. 22

A folding tea-table, like the one shown in Fig. 19, can be bought for \$3.00. The thousand-legged table shown in Fig. 20 can be purchased for \$6.75. A convenient adjunct to the dining-room is a tray table, shown in Fig. 21, which can be bought for \$1.50. The Dexter folding table, illustrated in Fig. 22, can be bought for \$15.00.



Fig. 23



Fig. 24

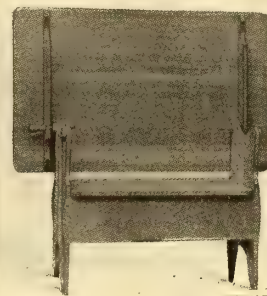


Fig. 25



Fig. 26

The straight back Plymouth chair, illustrated in Fig. 23, can be purchased for \$6.75, and the rocker for \$7.50. The two chairs shown in Fig. 24 cost \$3.50 and \$3.75 respectively. A convenient accessory for a living-porch is a laundry table which can be used as a settle, as shown in Fig. 25, and costs \$6.75. The settle shown in Fig. 26 makes a useful chair or table when required, and can be bought for \$6.75.



Fig. 27



Fig. 28



Fig. 29



Fig. 30

The chest of drawers shown in Fig. 27 can be bought for \$12.00. A cottage study table, such as the one shown in Fig. 28, can be bought for \$12.00. The sideboard illustrated in Fig. 29 can be purchased for \$15.00. The chiffonier presented in Fig. 30 can be obtained for \$11.25.



Fig. 31—A portable garage

The doors are made of California fir hung in a strong frame and supplied with hinges, locks, etc. As a rule, the doors are one and one-quarter inch thick.

Three good coats of paint are applied—lead and oil, the ground color, and finally the last layer of any color the owner pleases to order. The woods used are cypress, red cedar and California red wood.

Houses of this description run from \$420, \$540, \$650, \$915 to \$1,330, according to the number of rooms. The highest named figure represents a nine-room, two-story cottage with two dormer windows and verandah on two sides.

Another method of building these portable houses is equipped with double panels, dead-air space, two thicknesses of heavy paper and one of hair enclosed in the walls, which makes a building that is impervious to heat, cold or moisture, and is therefore absolutely dry and healthy. All cottages of seven feet or less in height are open to the rafters, but those of eight feet or higher are ceiled overhead.

The houses are in sections, three feet wide and from six to ten feet high, proof against wind, being cross-braced and bolted, and will not rack.

The material used is the strong fir that grows in Washington, and thoroughly kiln-dried. The double ceiling contains a patent hair insulator between ceiling and strips, forming an air space. The hair insulator is made of cleaned and dried hair sewed between paper; which the inventors claim makes a house as warm as if plastered, and drier and healthier. The roofing is perfectly water-tight, but, if preferred, shingles are furnished. The outside is primed with a good coat of boiled oil and ochre as the setting up progresses.

Two-room cottage, 12x24 feet, with 7-foot ceiling and porch 5x24 feet, costs \$212.50; three-room cottage, 12x30, with porch 4x12, costs \$230; 21x24, with porch 6x9, costs \$275; and 21x24, with porch of same size but slightly heavier in weight, costs \$295. A four-room cottage, 22x24,



Fig. 32—A double car garage

with eight-foot ceiling and no porch, costs \$345. Another with verandah, patent roof and galvanized iron flue for shipping, costs \$375. The same house can be rendered more attractive and comfortable by the purchase of extra double dormer windows for \$15, single dormer for \$10, and double cottage windows are substituted for the regular windows at an added cost of \$1.25 per opening.

A five-room cottage costs \$470; and a charming little bungalow 21x36 feet with 12x15 projection for a kitchen and a regular covered, or pergola porch, for \$675.

Another variety of portable house is constructed with a steel frame. The posts are iron pipes of suitable dimensions, which fit over the projecting casting on the foundations and support the rafters, which are made either of iron or of wood well ironed, and which fit into the top of the posts. The frame is braced by means of heavy steel wire or rods, having turnbuckles to tighten the frame until it is firm and rigid. The purlins are of angle iron, placed at the proper distance apart to support the roof sheets. Angle irons also extend along the sides and ends, to which the siding sections fasten. The siding is of corrugated iron galvanized or painted, fastened securely to the angle iron frame by means of malleable iron hooks, or it is made of lumber, in sections about three feet wide, beaded on the outside but smooth inside, for paper or burlap. The partitions of the rooms are made of the same grade of lumber as the outside. The ceilings are canvas of eight-ounce duck, and when stretched tight overhead and painted makes an air-tight ceiling.

The windows are put in a section and do not have to be removed for shipping. They are composed of one sash, which raises by sliding in a groove in the frame, and is held by a common spring bolt. As a rule for eight-foot rooms, a two-light sash 24x20 is used, and for larger rooms a two-light sash 24x24 is used. The floors are usually of yellow pine made in sections three feet wide and from



Fig. 33—A car leaving the garage

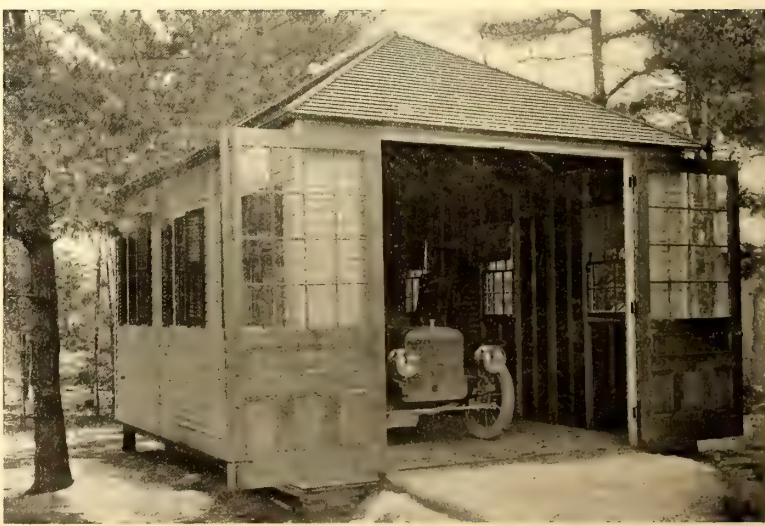


Fig. 34—A single car garage

twelve to sixteen feet long. The roofs are of painted iron, corrugated sheet iron, painted or galvanized, the sheets overlapping, and a lumber roof, which is cheaper but which has to be covered with tar paper or tar felt or shingles, or any kind of prepared roofing the purchaser pleases. Chimneys are of metal or galvanized iron, which fit over the roof leaving room to put up a stove-pipe inside of it.

Generally speaking, and assuming that the summer lodge is to be furnished throughout, the allowance may be apportioned as follows:

Living-room	\$100.00
Dining-room	75.00
Bedroom	50.00
Bedroom	50.00
Kitchen and pantry	75.00
Bathroom	25.00
Table and house-	
hold linen	125.00

\$500.00

Fittings, etc. 75.00

\$575.00

This sum will include inexpensive rugs, window curtains, hearth furniture for the living-room, lamps (not forgetting a pretty lantern of Venetian or Turkish design with ruby, green, amber or white panels, costing only \$3.00, to hang on the porch), candlesticks, and an ice-box and oil-stove for the kitchen. The sum of \$25.00 will purchase a sufficient number of cooking utensils for such simple living. A small archway between the kitchen and dining-room above the drop-shelf in the latter will prove a great convenience, as no portable servants are supplied with the portable house, and those who render the dishes portable will be glad of this slight aid to service. Corner-cupboards and corner-closets that take the places of buffets and wardrobes are frequently furnished, if desired, by the builders of the house. Mantel-pieces are extra. It is well to have a fireplace if the mantel-piece is omitted, because the early mornings and evenings are often damp and chilly in the country, and rainy days are often cheered by the sight of a few burning logs or even a bundle of fagots.

A good deal of the furniture can be supplied with the house. Drop-tables in every room are of great convenience, and only cost \$2.50 each. A double drop-table appears in Figs. 12 and 13, shown open and closed. This is excellent in bedrooms, to do away with the necessity of dressing-table, or wash hand-stand, or both. It is

also useful in the dining-room for a sideboard, and in the living-room for books and magazines, etc.

Folding spring-bunks afford good beds. They cost from \$4.25 up. One is shown, both closed and open, in Figs. 10 and 11. The mattress, of course, can be as luxurious as one pleases.

A drop-shelf can also be placed in each bedroom and hung with curtains. Behind it a rack with hooks will afford a convenient wardrobe.

The living-room can be made attractive with white curtains, a bright rug, portable book-shelves, a table or two, and a set of willow furniture. Comfortable arm-chairs, cushioned, can be purchased for \$7.50, \$9.00 and \$12.00. Bamboo portieres cost only \$1.25 each. Down cushions and floor cushions (useful for the porch) should be generously supplied. Folding furniture is desirable and several excellent models are now in the market. Our illustration (Fig. 17) shows a table-chair, closed and folded. This is 29½ inches high, with top down. The top measures 30x30. It weighs 41 pounds and



Fig. 35—A portable garage, showing the cleaning pit

costs \$6.25.

Cottage folding card or tea-table (Fig. 19) is twenty-eight inches high, solid oak, and painted any color to suit the purchaser. It is twenty-nine inches in diameter, and costs \$3.00.

Another folding-table of the "gate-legged" type costs \$6.75.

A cottage screen (Fig. 15), useful in the bedroom, the frame filled with denim or burlap, costs from \$3.75 to \$10.00.

The Dexter-table (Fig. 22) of oak or birch, thirty-eight inches in diameter, costs \$15.00. A round settle with table-top in white wood, or pine, finished in any color, costs \$6.75 (Fig. 26). Cottage study table (Fig. 28), any color, 48x27, costs \$15.00. Wooden settles, finished in any color (top, 48-30 inches), can be bought for \$6.75 (Fig. 25).

Magazine stand, with door (Fig. 16), 44 inches high and 13½ inches wide, costs \$6.00. Cottage sideboard (Fig. 29) 60 inches long, 22 inches deep and 44 inches high, costs \$30.00. Cottage chiffonier, 26 inches top, 26 inches long, 18 inches deep and 67 inches high, including glass, \$11.25. (See Fig. 30.) An English breakfast table, 40x36, of plain oak, costs



Fig. 36—An automobile that can be bought for \$485

\$6.75. Tray-stands are only \$1.50. A round cottage table, any color, costs \$3.75, and a chest of drawers, 63 inches high, 24 inches long and 20 inches deep can be had for \$12.00. (See Fig. 27.)

Turning now to the question of chairs, the old-fashioned "Plymouth Kitchen" (Fig. 23), costs \$6.75, and the rocker, \$7.50. "The Plymouth Kitchen" comes in oak or birch, with English flag seats. The "Antique Kitchen," with hand-woven reed seats and ash or birch frames, are \$3.50 and \$3.75. The latter make excellent dining-room chairs for the portable house, and also good bedroom chairs, particularly if painted a nice color and rendered bright with cushions. (See Fig. 24.)

In the construction of a garage there are several things that must be borne in mind: (1) That the garage is rigid and permanent when erected (although portable); (2) that the interior will be perfectly dry at all times and also protected from the intense heat of summer and the cold blasts of winter; and (3) that it shall have a neat appearance when erected.

A very excellent house that can be put up in two days by two inexperienced men is made of kiln-dried Washington fir lumber, which is the strongest in use. The building is formed of panels fastened together with bolts, and where the fastening cleat joins the panels a strip of rubber packing is inserted which makes a perfect joint. The patented panel construction produces a house that is boarded inside and outside, with an air space; and a patent hair insulator is placed between the boards. The roof is boarded over and covered with a patent roofing, water-proof, and is capable



Fig. 37—A launch that can be bought for \$350

of withstanding all kinds of weather. There is no ceiling, and consequently the rafters are visible. These are of dressed lumber secured by collar beams, which are eight and one-half to nine feet from the floor. The floor is made of one and one-half inch lumber overlapping at the cracks. The doors are nine feet wide and eight and one-half feet high.

A garage of this description can be purchased for \$115.00. The size of this is twelve and one-half feet

square, and weighs three thousand pounds. A larger garage (12x15 feet) costs \$135.00, and one (12x18 feet) costs \$155.00.

Another style is of portable steel. This consists of a foundation of wood, uprights of iron pipe, frame of angle iron connected by malleable castings and properly braced; rafters of tee iron, roofing of 24 gauge galvanized steel fastened to angle-iron purlin sides, ends and doors of 24 gage galvanized corrugated steel; small windows in each gable, hinged to swing in and operated by a cord; one window on each side, four lights 10x12; double doors, 8x8 feet, with heavy hinges, bolts and iron hasp for padlock. The floor is made of concrete, asphalt, cement or cinders. The building is fireproof. The sizes are 9x16, 12x14, 12x18, etc. Flat roofs are cheaper than gable roofs.

Another portable wooden garage has a foundation of wood with uprights of iron pipe and iron frame; but has rafters of wood ends and doors of notched and beaded pine. Small windows are placed in each gable and hinged to open inside, double doors are hung in two parts and are furnished a two-inch plank floor of hemlock.

(Continued on page 242.)



Fig. 38—A motor boat that costs \$280

Decorations and Furnishings for the Home

By Alice M. Kellogg.

IV.—Fitting up the Porch



QUITE a radical change is in progress regarding the furnishing of the porch, or piazza. More and more, as we come to understand the benefits of open-air living do we value the opportunities afforded by the veranda, and, instead of making this part of the home a catch-all for miscellaneous articles, its fittings become a matter of discriminating care.

In many suburban towns the piazza faces the street, and some protection is imperative from "the public eye." Some hardy vines, Virginia creeper, wistaria or clematis, may be started at the base of each of the porch supports, and, as a temporary expedient, a quick-growing annual vine, *coboea scandens* or wild cucumber, may fill the spaces. Foliage or flowering plants set in tubs are also helpful as a screen.

The Japanese rolling screen (a wide one is shown in the large illustration), made from rattan and varnished, has met with great popularity. A more expensive substitute has this year been brought over from Germany, made of basswood and painted dark green, with metal pulleys and durable cords for adjusting. Where the price of the first one would be, in a size eight feet wide by eight feet long, about a dollar, the German make would cost about six dollars.

Awnings add very much to the exterior attraction and interior comfort of a porch. Green-and-white stripes are cool-looking, but they do not resist the stress of the elements. Red-and-white awnings are festive in appearance, but transmit a glare that is often trying. The orange-and-white are claimed to be the only colors that are really durable, and these may nearly always be satisfactorily combined with the color scheme desired in the other furnishings.

The furniture for the piazza need not necessarily be all of one type. Wicker work in its various materials—reed, rattan, willow and rush—has come into prominence for its

lightness of weight and strength of construction. The willow examples shown in the illustration are especially good types. These may be had either in the natural wood or stained to match any desired color. The corner settle may be bought for \$26.75 in the natural color; the chair at its side for five dollars; the rocker with broad arms for \$6.50 and the small arm-chair for \$7. The work table costs \$13.50. As the charge for staining the willow must be added to these prices, one may do this at home with ready-made paints, as a matter of economy.

There are few patterns in the rattan make, the one in the large illustration with flat arms costing \$7.50. A long, reclining chair can be had of the same material, and a small, armless chair.

On the selection of chairs for the porch depends so much comfort that thought as well as money is worth expending to meet the individual preferences of the different members of the household. A set cushion at the back of a chair is often annoying by its rigidity, and a loose pillow in its place may be an item worth changing.

A swinging settle is a recent device to take the place of a divan or lounge. When it is fitted with cushions and pillows, it is a luxurious resting place. There are various styles of swinging settles, some made on the mission plan, others of bamboo and willow, others of heavy white duck. If the seat covering is chosen from plain material, the pillows may be of a more distinctive order, as the mediaeval design illustrated. Bird chintzes, which are now very much in demand, add to the interest of piazza seats.

If a material for the pillow covers is desired that will not fade, some of the curtain stuffs that are guaranteed impervious to sunlight may be utilized.

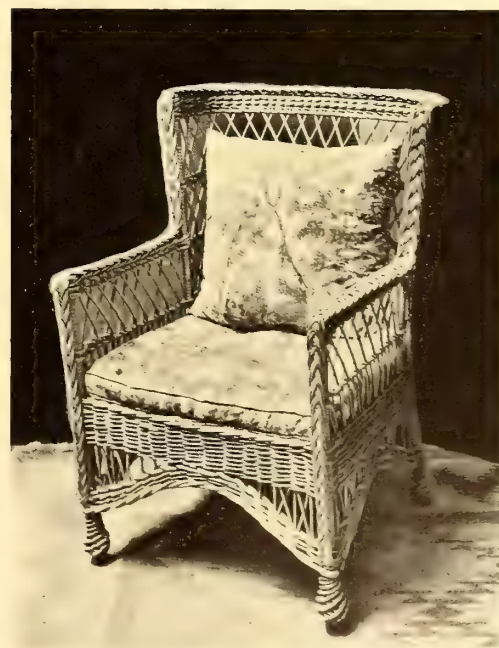
A cover for the porch table may be an item of interest if chosen from among the Persian prints showing a peacock design. In the thirty-six-inch square this cover costs a dollar and a quarter, and a smaller size seventy-five cents. Flower and plant holders are one of the needs of the sum-



A cozy rocker



A willow sewing-table



A low-backed chair

mer living-room that can be met at a small outlay if one chooses simple shapes in glass and pottery. Copper and brass are suitable for garden bouquets, and rustic boxes may be made from birch bark. To protect a table from moisture, there are glass mats made like a framed picture, and with a little ingenuity these may be made at home by laying a glass (round or square, over a photograph or colored print, adding a piece of cardboard at the back and binding all together with tape or braid. When the mat is not in service, it still is an object of interest as a picture.

The furniture for the porch is almost entirely comprised in the seats and tables, but one may find a need for bookshelves, a holder for outdoor wraps, a chest for garden tools or tennis rackets. As any one of these is added, it should conform to the general informality of the place. One of the kitchen settles that can be turned into a table has been found a useful article for the porch, and if bought in the unfinished wood, it may be painted with out-door colors as a protection from the weather. These combination settles come in several sizes, from three feet up to six or more feet.

Floor coverings are a considerable factor in giving both comfort and pleasure to the piazza. The grass matting rugs are as cheap a covering as one may buy for the porch, and the plain tone is a good setting for color effects elsewhere. The rag carpet made by the yard is suggested for a runner on a narrow porch, or the made rugs in this weave can be had in varying sizes. Only the darker colors, of course, should be selected. Jute rugs made in India, showing one color with the natural color of the jute, are well suited to the verandah, and one special pattern with a mixture of several colors, dark

red, orange, black and tan, is very effective. The Scotch rugs often mentioned in this department are another serviceable choice. The sizes of the porch rugs depend so much upon the position of the furniture that it is better

to adjust the chairs and tables before deciding on any specific shapes. Although a general and safe rule for a floor covering is to have it of generous width and breadth, one may find that small rugs distributed in front of the sitting places are more satisfactory.

Strips of old carpet are sometimes laid down on a piazza floor as being "good enough" for this position; but, at a small cost, these same lengths of carpet may be converted into soft, mossy-looking rugs that are really worth owning.

The ideal lighting at night for a porch is by electricity, and there are many artistic designs for lanterns or ceiling lights. A side bracket with a lantern swinging from it is another pattern that suits the conditions. Or an iron or bronze Japanese lantern may be fitted with electric wiring.

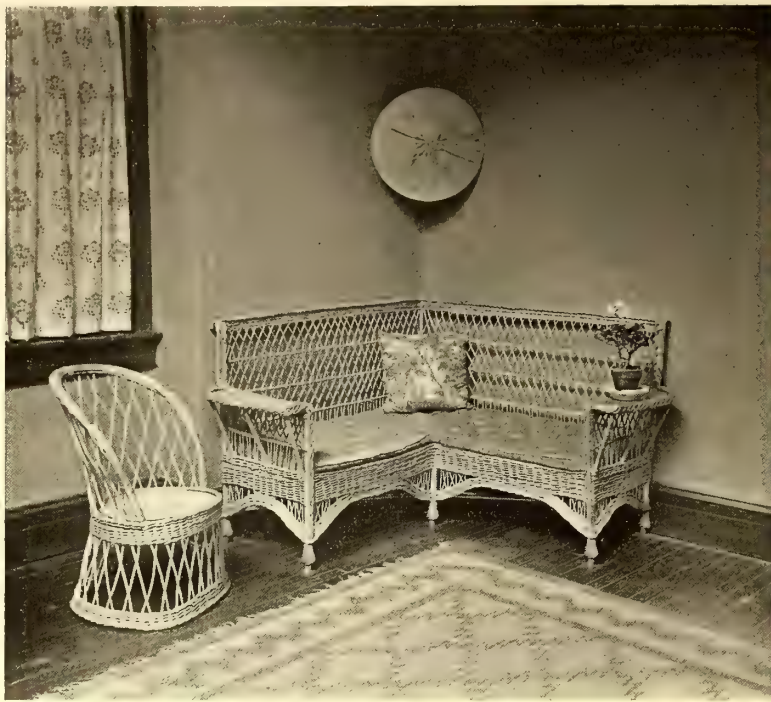
With gas for illuminating, one cannot achieve as creditable fixtures as with electricity, but even with candle-power one may realize some artistic effects with ordinary Japanese paper lanterns.

The inside walls of a piazza are often a perplexing matter to the home-maker who is anxious to introduce some decoration. The mixture of wood, glass and plaster seems to require something different at each break. Sometimes a veranda is so nearly inclosed by walls and glass that it is almost a part of the interior of the house. Curtains, too, seem to be needed, yet after a manner of their own. The mistake in meeting these conditions is usually in attempting too much, and in not allowing the simplicity of the life to be enjoyed in the place to be the motive for choice.

All decorations may be of the poster type, bold in outline and vivid in coloring. Flags and pennants are also fitting in this place. The permanence of real value that belongs with the decorations for the interior of the home need not apply to

the piazza, and objects of quite ephemeral charm may be renewed from time to time.

As the interest in porch furnishing has developed, the architectural efforts in this direction have increased. In



A corner settee



A comfortable lounging settee

some country homes one finds that a fireplace has been introduced in a corner of the piazza, with spaces to be filled with glass during the winter months. With a fireplace to fit up, there must be a pair of andirons, shovel, tongs and poker, with a fire screen for protection. For this place, the black iron has a more substantial look than brass, and also exacts no attention on cleaning day.

A glass fire screen recently made in New York

materials are sometimes more pleasing than an opaque weave. For large expanses, a figured material is usually better than something plain. Some of the India prints are serviceable, as the colors are dignified and will stand laundering. Homespun and crash at one dollar and a quarter a yard have a certain fitness for the porch, and the color range is satisfying. To the amateur worker with stencils there is a field for employing this art in the curtains for the porch,



A quaint pillow cover



A commodious porch



was especially decorative for a porch fireplace. This was cut from brass that was laid against a luminous sheet of glass showing ships in a sunset glow, and one could imagine its brilliance displayed in an out-of-doors setting.

If curtains are to be admitted to the porch, there should be some obvious reason for their introduction. Lace and net are not called for, but colored gauze or wide meshed ma-



Table cover for a porch

and for originating both design and color combinations.

In a seashore cottage that was only occupied during the summer months, the rough boards that formed the two sides of the walls were hung with discarded fish nets, looped in simple folds to suit the spaces, the weather-worn colors of the net suiting the gray wood and softening the long, plain expanses of boards.

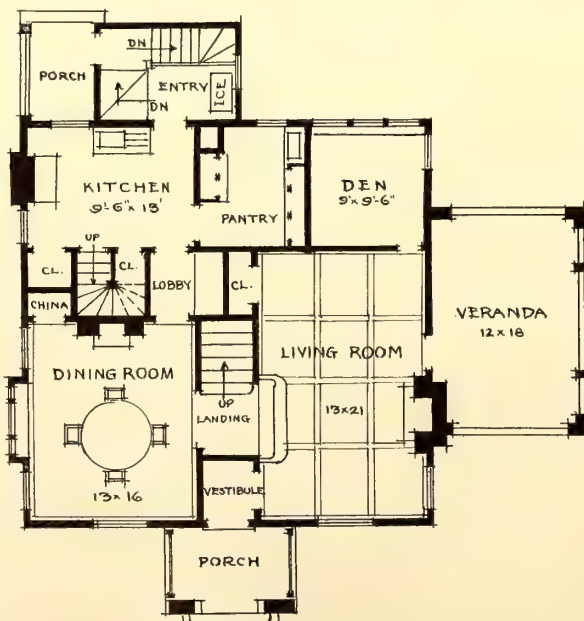


A Suburban House in the Mission Style



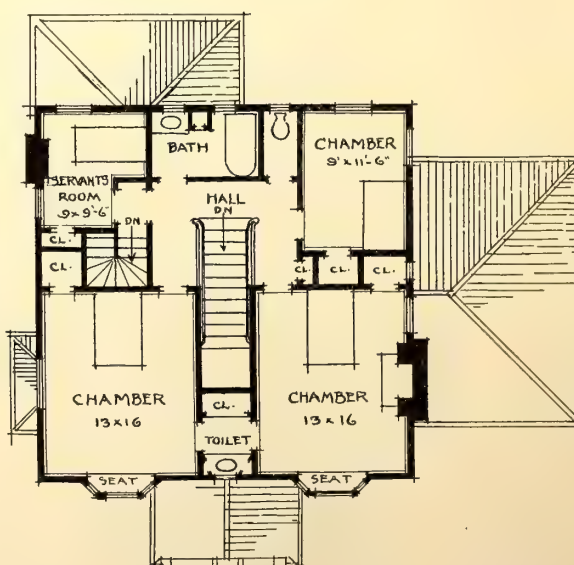
UNIQUE and attractive little home can be erected complete in the suburbs of the City of New York for \$6,000. This estimate has been given by a reputable builder, and is the result of a careful study of the drawings. Although there is no third story, every inch of room is

taken advantage of, and the house would comfortably accommodate a family of four. The two front bedrooms are large, and are joined by a passage containing toilet and medicine closets. These rooms have windows on two sides, as have all the bedrooms, thus securing plenty of light and ventilation.



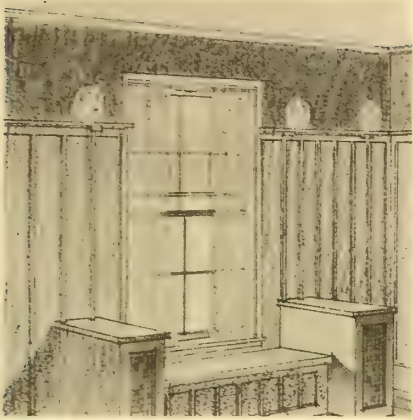
The first-floor plan

In addition, the main bedroom has an open fireplace. There is a good-sized maid's room on this floor, and a completely equipped servants' bathroom in the basement. The latter section also contains a large dry store-room, with a wood floor laid on sleepers. This is for use in the storage of trunks, boxes, etc. Thus all the accommodations of the usual attic are provided, with the advantage that the expense of an extra flight of stairs, higher roof, and the entire finish of the third story is saved. By this means an ample air space over the second story is secured, and the

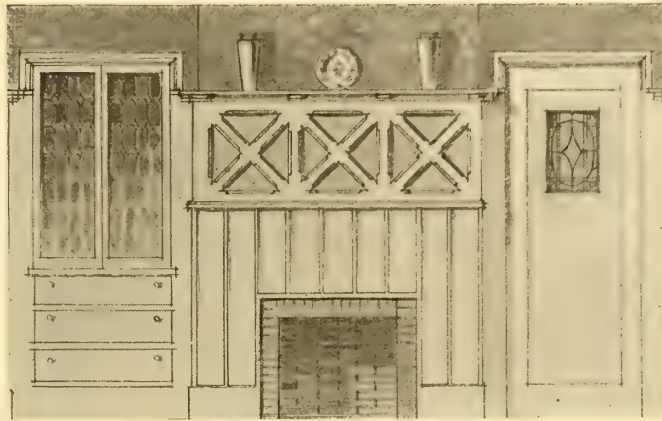


The second-floor plan

noise occasioned by people walking overhead is entirely eliminated. An excellent feature of this plan is the separation of the toilet from the bathroom. There is a clothes chute from the bathroom to the laundry in the basement. This



Pedestals at each side of seat in dining-room enclose the radiators



A harmonious scheme for a china closet, fireplace and mantel for the dining-room



A feature of the dining-room is the oriel window built at one side

chute passes through the pantry, in which there is a door allowing napkins and tablecloths to be sent directly to the laundry. The back stairs lead conveniently from the kitchen to the servant's room.

The living-room is trimmed in chestnut. It has a high paneled wainscot and a heavy beam ceiling. A rare feature is the secret doors in the paneling, giving access to the den and coat closet. The den is also trimmed in chestnut, is very secluded, and has bookcases built in, and over these are leaded glass windows. The dining-room is level with the stair-landing, and the floor is three steps higher than that of the living-room. This room is paneled in white-wood enameled white, with a plate shelf over. The mantel is built in to harmonize with the paneling.

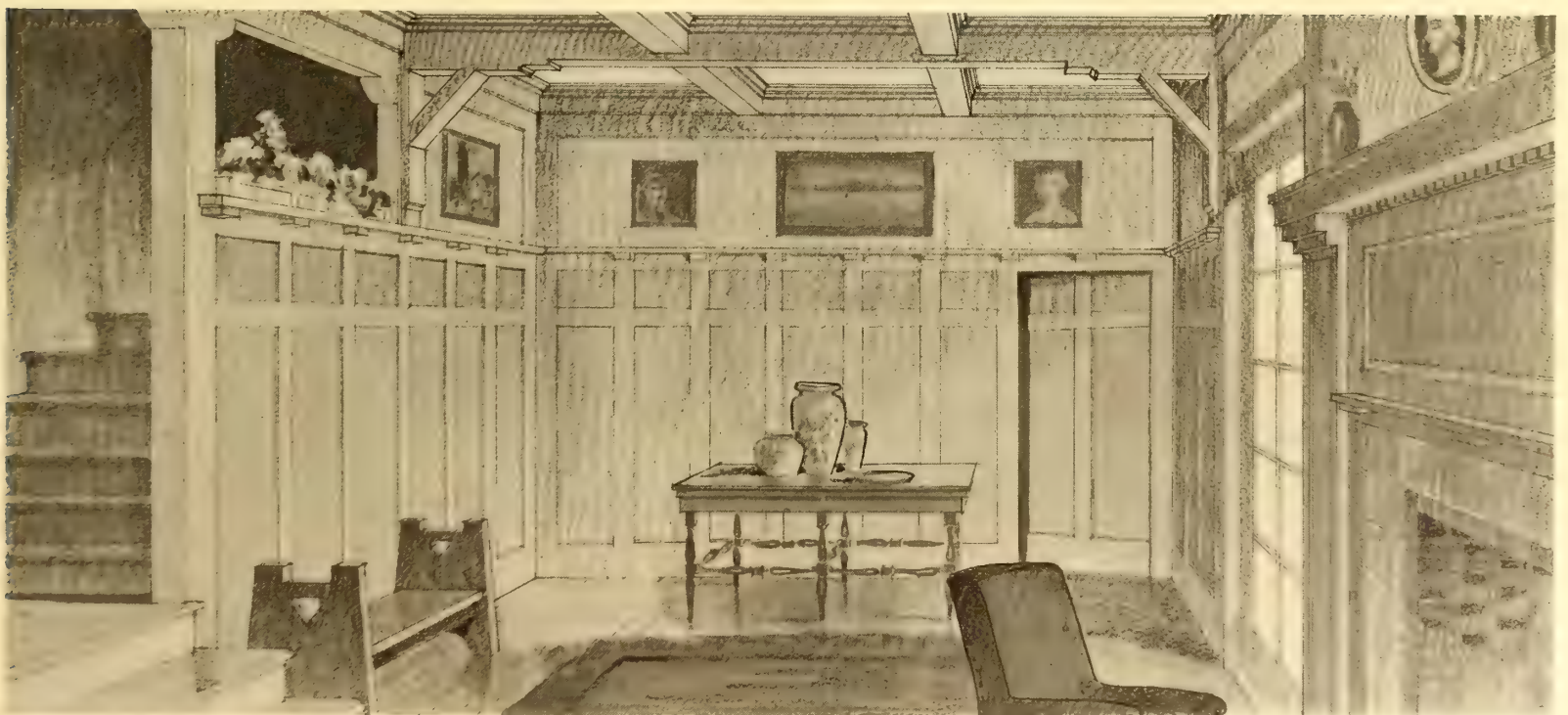
Another novel feature is the arrangement of the radiators in the dining-room. They are boxed in the arms of the seat, as shown in the sketch, the heat coming through registers in the front and top, and the valve is reached by raising the seat lid.

The exterior of the house is symmetrically designed in the mission style, the sides being of rough stucco finished white with La Farge cement. The roof is of red Spanish tiles with large overhangs, giving effective shadows.

Messrs. Walker and Hazzard, the architects of this sym-

metrical little house, are firm believers in the principles of the mission style, as adapted to domestic architecture. There is an absence of affectation about it and a lack of unnecessary detail which appeals to the good housekeeper. Beautiful effects are arrived at in the simplest possible manner, the results being obtained by good proportion and proper distribution of light and shade rather than by a surfeit of ornament. Throughout the entire interior of this house the trim is as plain and unpretentious as it could by any means be, and another success of this treatment is that the grain of the wood shows up to advantage on account of the broad surfaces. The mission furniture, also, bids fair to remain popular for a far longer period than most of its rivals. It is founded on principles of common sense and comfort, the lines are pleasing because of their simplicity, and such furniture will withstand all the wear and tear to which it can be put.

This style has great possibilities for use in small houses such as the one here illustrated. It is economical and in every way suited to the purpose. We hope that more architects will give it the study which it deserves, and we feel sure that the result will be greatly to the advantage of our American domestic work which has so remarkably improved of late years.



The living-room

Short Horned Cattle

By Theodore Langdon Van Norden



Shorthorns at Naarden Farm, South Salem, N. Y.



IT HAS for years been stated that there are only two kinds of breeds of cattle—the dairy breeds and the beef breeds. It has been claimed that no cow exists which satisfactorily combines qualities of the two classes. The milking Shorthorns, however, disprove this statement. They serve the dairy well, and the bull calves make the best of veal.

It cannot be claimed that the Shorthorn cow gives as much milk as a Holstein, or milk so rich as a Jersey. She does, however, give much richer milk than the Holstein, and more milk than the Jersey. A year's yield of butter would, therefore, compare well with that obtained from a Jersey, or, indeed, surpass it. For instance:

A Shorthorn herd should average 6,000 pounds of milk annually at 4 per cent. butter fat.

A Jersey herd should average 5,000 pounds of milk annually at 4½ per cent. butter fat.

A Holstein herd should average 7,000 pounds of milk annually at 3 per cent. butter fat.

Making the calculation, it becomes apparent that the Shorthorn herd gives as much butter fat, or more than the Jersey herd. And I may add, incidentally, that my best Shorthorn cows give over 7,000 pounds annually.

As to the cost of keeping, it is true that the Shorthorns are much larger than Jerseys, and if their appetites were commensurate with size, the question of feeding might deter breeders. But they do not eat as much, proportionately, as do Jerseys, with the result that their cost is just about the same.

Hardiness and gentleness are both characteristics of the Shorthorn. They are not nervous, and the cow's flow of milk is less often interrupted than is the case with more restive breeds. No milch cow should be too much exposed to cold weather, if the best results are to be expected, but the Shorthorns come of a sturdy stock, and do

best out-of-doors for the greater part of the year. In the severest weather they are easily housed, and thus another source of expense is eliminated. On the other hand, if the barn be well aired, the Shorthorn will stand the confinement well, with a few hours' exercise in a small paddock.

So much for the Shorthorn's dairy recommendations. The animal's value, however, does not stop there. The Shorthorn has the large frame of the purely beef breed, and when fattened for beef quickly produces the great carcass wanted by the butcher. Shorthorns are most economical feeders, too, and make use of every ounce of food. The calves are large, and bull calves make a rapid growth, as well as having a ready sale. The standard weight for bulls is 1,900 to 2,300 pounds, and for cows 1,200 to 1,600 pounds.

This question of the value of Shorthorns to the butcher is one of growing importance. It is many years since the great herds of the West deprived the eastern beef-raiser of the possibility of profit; but the pendulum is beginning to swing back. There is every prospect that the East will soon be again raising beef with profit. High authorities, and, for that matter, every-day experience, show that the East will soon have to provide for itself, at least in part.

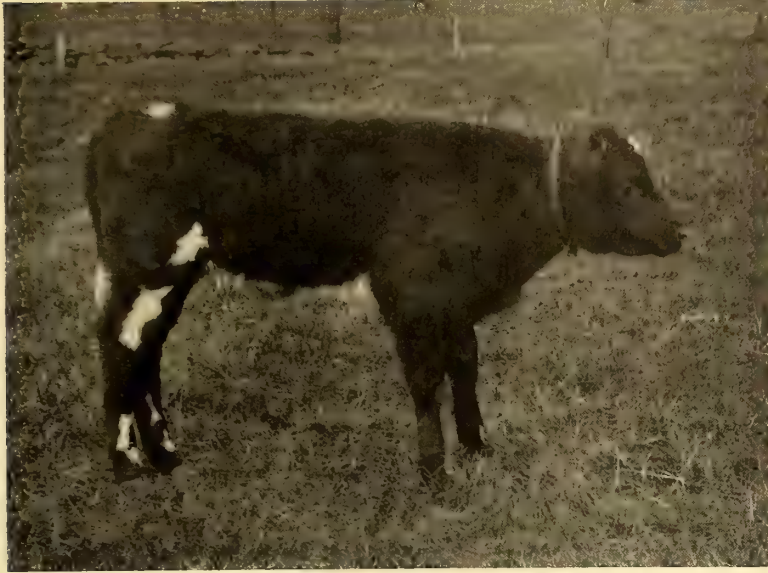
The eastern farmer generally has a small herd. He wants cows that give a large amount of good milk, and which can be sold. He wants milk rich enough to enable him to make his own butter and also sell butter when he has milk to spare, and yet he wants cows which are large enough, when old, or if they meet with accidents, to be sold to the butcher. He also wants his bull calves of sufficient size to be sold for veal.

Again, the farmer wants cows that are strong and



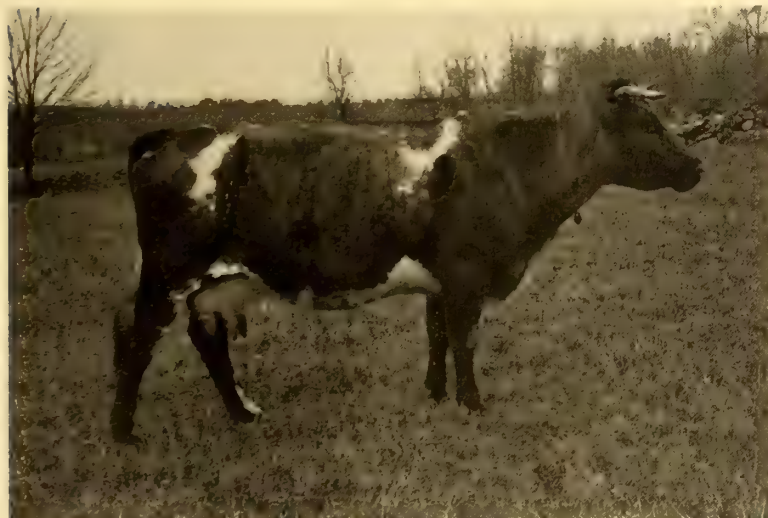
Roan Duke, at the head of Naarden Farm herd

hardy, good foragers upon our rough pastures, and able to stand our severe winters with the least danger of tuberculosis. All these requirements are met by the Shorthorns. Certainly the breed offers a solution of various difficulties.



A few days old

So far, I have considered the wants of the small farmer who deals in milk or beef, but the Shorthorn may well be recommended also as that all-round reliable animal, the "family cow." If but one cow is kept, what could be better than the creature who gives good and plentiful milk, for whose calves there is a ready sale, and who is so gentle that she may be kept in the horse stable and milked by a man of very moderate dairy experience? She is so hardy that she will require few of the "modern conveniences" demanded by some breeds, and if the fence around the pasture is of medium height, she can be depended upon not to jump the restraint in a fit of nerves or depression.



A young heifer, promising to be one of the milkers, and of the best Shorthorn conformation; mark her long, level back

Nobody now disputes the advantage of pure-bred stock. If they have plenty of fresh air, and are not confined too closely, they are just as hardy as the scrub, while the largest milk yield, and the largest beef production, is always from pure-bred or high-grade cows and steers. The most practical way for a farmer to improve a herd of native or scrub cattle is by breeding them to a pure-bred bull. If a vigorous, well-bred Shorthorn male be selected, his progeny will invariably carry his long, level back, short legs and beef characteristics; and, if he descends from a milking strain, his daughters will show marked improvement in dairy qualities. Especially if the cows are wanting in size, he is a source of immediate improvement. After a generation or two, the Shorthorn grade heifer is practically as good as the registered pure-bred.

We are now alive to the necessity of improving our stock,

and the future promises conditions radically different from those which have obtained in recent years. The fairy-lands of the West, where everything was produced with seemingly no effort, are rapidly becoming a thing of the past. The eastern farmer, after a long period of struggle, can look forward to coming into his own. It will be only poetic justice if the breeding of the Shorthorn should go on apace, for beef-raising in America had its origin in the Shorthorn, then called the Durham, more than one hundred years ago. At first, in the East and in Kentucky, the breed extended rapidly. When the growth of the western herds made it impossible to produce beef at a profit, Eastern farmers turned to other breeds, not recognizing the value of the Shorthorn for the very purposes they sought. But the widespread interest in Shorthorns to-day, and the steadily increasing prices paid for cows, apparently indicate their appreciation throughout the



A few weeks old

land, and suggest that the highest hopes of Shorthorn breeders are founded upon reality.

As food values are being studied by government experts with rich results; as the care of milch cows is receiving extensive attention in reference to their housing, particularly during the hour of milking, for the purpose of securing cleanliness and safety from infection; and as tuberculosis is being closely watched by veterinary specialists and scientific bodies, we see no reason why our Shorthorns should ever fail to hold their own in any farming district.



The mother of Naarden Farm herd. She has given more than 7,000 pounds of milk annually. She still milks more than 5,000 pounds at twelve years of age



“Fox Hill Lodge”

The Summer Home of Mr. Prescott Bigelow, at Manchester, Massachusetts

By Mary H. Northend



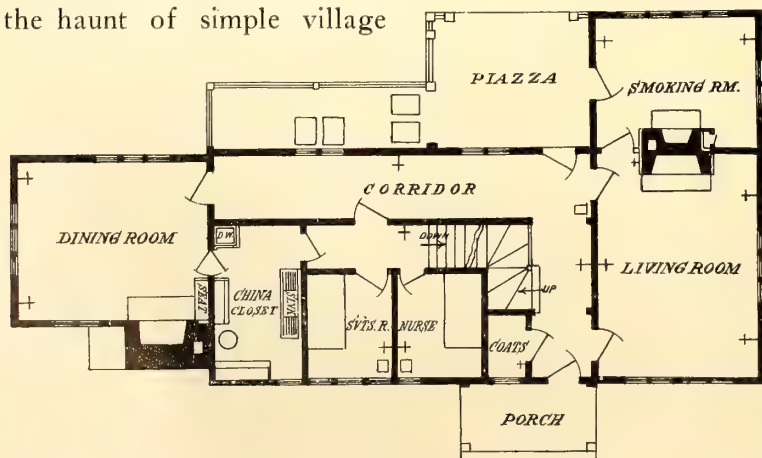
A SHORT distance back from the main highway, at a point midway between Manchester and Magnolia, one comes upon a most charming little house, built after the style of an English lodge, ensconced in a setting of close-cropped lawns and shaded by fine old trees. It crowns the crest of a low, broad hill, leveled at the top to make it even with the roadway, and it overlooks at the rear broad stretches of meadowland that sweep to the water's edge.

This is “Fox Hill Lodge,” the summer home of Mr. Prescott Bigelow, of Boston, Mass., and it was designed by Messrs. Sturgis and Barton, well-known Boston architects. It received its quaint name from the fact that in former days, when the present fashionable North Shore was the haunt of simple village

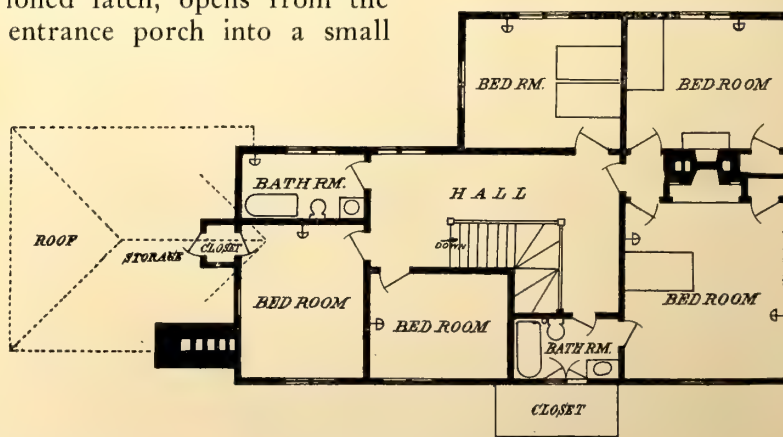
folk, this site was said to be the favorite camping ground of the numerous foxes that then inhabited the woodland districts. However this may be, the legend is a pretty one, and the charming house that now graces the site is most appropriately named in consequence.

The exterior finish is principally of stone and stucco, with the lower story of the front part clapboarded and stained black. The trim of this lower portion is painted white, while the trim of the rest of the house is stained black. Quaint casement windows, in groups of two, three, and four, all opening outward, line the house on all sides, and render the interior bright and cheery, and a great, outside chimney, built of rough stones and old brick, located at one side, is a striking feature.

A pretty Dutch door, ornamented with an old-fashioned latch, opens from the entrance porch into a small



First floor plan



Second floor plan



The living-room

hallway from one side of which a narrow staircase, outlined on one side with a screen balustrade rail, adorned with a foxskin, ascends to the apartments in the upper story. This hallway opens into a long corridor, with coved ceiling, that extends along one side of the house and connects with all the rooms on the first floor. The walls are hung with paper of English pattern, adorned with representations of feudal castles ensconced in leafy bowers, and the woodwork is painted white. The floor is of polished hard wood, as are all the floors throughout the house. The furniture consists of rare Colonial pieces. Groups of casement windows, shaded by pretty Dutch hangings of white muslin, are arranged on the outer side of this corridor, and render it light and airy.

To the right opens the living-room, a charming apartment, simply and tastefully arranged. The walls are hung with English hunting paper, and the woodwork is painted white. A great fireplace, constructed of red brick laid in white mortar, occupies a space at one end, and it is equipped with an old-time crane and kettle, iron fire dogs and other Colonial fire implements, and close beside it stands a dainty tea-table, on which repose some rare old china bits, suggestive of frequent fire-side tea parties. Beautiful claw-foot furniture delights the eye, and the rich tints of its mahogany framings are vividly set forth by the touch of the sun's bright rays as they stream in through the cluster of windows, shaded by muslin hangings.

From the living-room a door opens into the den, a cosy apartment, finished in olive green with white trim. A broad mantel, adorned with numerous quaint knick-knacks, extends above the spacious fireplace and on the wall overhead hangs an English hunting picture. Great armchairs and a broad settee, equipped with downy pillows, lend an air of comfort to the room and suggest cosy after-dinner chats. At one side stands an old-time desk, with a high stool in front, and on the wall above it hangs a fine Colonial mirror.

This room opens at one end on to a broad veranda, attractively fitted up as an outdoor living-room. Rugs adorn the floor, and numerous lounging chairs and couches are placed about, while a tiny tea-table is ensconced at one side. The veranda

is entirely secluded from view of the main road by a group of fine old trees that cluster at one side, and it certainly is a most attractive nook in which to while away a summer's afternoon.

From the farther end of the corridor opens the dining-room, located at the very end of the house and overlooking fertile fields and meadows, with a distant view of the ocean. It is finished in a color scheme of red and white, charmingly intermingled, and is undoubtedly the gem of the whole house. The walls are treated with rough plaster, stained white, and the trim is likewise painted white. Pretty red curtains shade the casement windows, and falling upon the white woodwork beneath and at the sides, reflect a roseate hue.

A quaint, old-time dresser stands at one side, and it is filled with rare china bits. On the top repose several fine pieces of pewter, and numerous other specimens of this rare old ware are shown on narrow shelves above the window casings. The walls are hung with rare English prints, representing the fox hunt, with foxes of every description, and the hardwood polished floor is partly covered with an arts and crafts rug in tones of red and white. The fine old Windsor dining-chairs are painted white and cushioned in red, and the dining-table is also stained white.

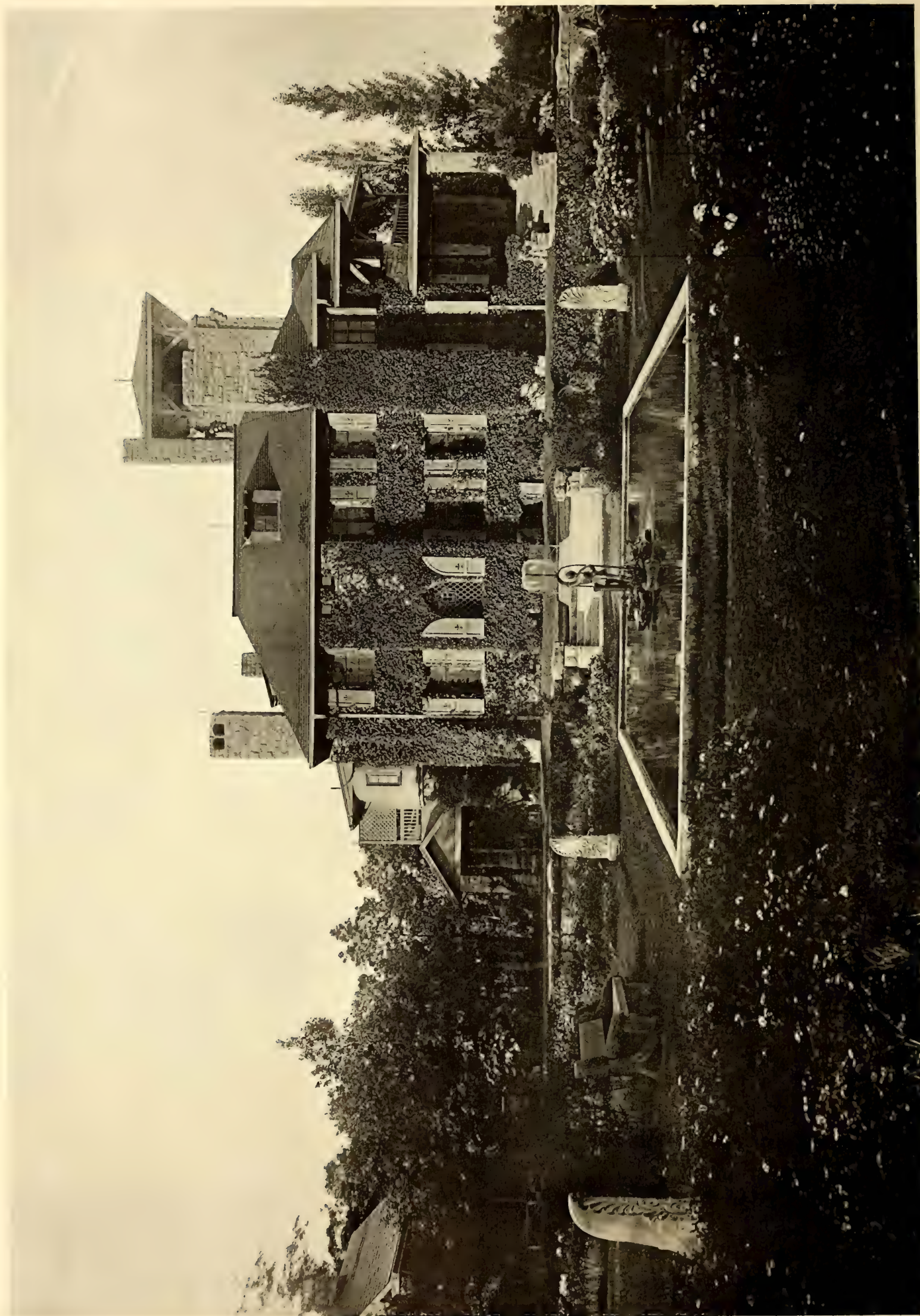
At the left end of the house are located the servants' quarters, entirely separate from the main apartments, and entered through a convenient door in the corridor.

On the second floor are four good-sized chambers, a large pool room and two bathrooms, all finely arranged.

No description of "Fox Hill Lodge" should leave out of view the fact that the matter of design has been skillfully and artistically executed. Here the architects had a site that inevitably would appeal to the possibilities of planning a much larger dwelling. To ultimately keep within the lesser bounds of a type of the style and area of the English lodge, shows that the limits under which designers work can be met with taste and perfect proportion. Of the different ways that one may look at this delightful house none is disappointing.



The den



The house and the garden at "Rachelwood," Laurel Hill

American Homes and Gardens

Garden Competition

Honorably Mentioned Garden



The gateway at "Rachelwood," Laurel Hill



ONE of the most interesting gardens of those that received honorable mention in the recent Garden Competition of AMERICAN HOMES AND GARDENS, is the one belonging to Mrs. James R. Mellon, at New Florence, Pa., and when it is known that it was built on a plateau in the Allegheny Mountains, at an elevation of 2,200 feet above the sea level, the fact of this altitude will give an element of variety that adds scope to the character of the contributions receiving recognition by the judges.

This garden is situated seven miles from New Florence station, in the historical Ligonier Valley, and is laid out in geometrical form and on an axis with the garden front of the main house. It is 106 feet in width and 144 feet in depth, and is enclosed on three sides by stone columns to the height of six feet, at which point a pergola effect is ob-

tained by the beams and cross bars which rest upon the columns. The planting of the enclosure took place about the 10th of May of 1909, and was just four months old at the time the photographs were taken of it. The original grounds adjoin the residence in the forest. In order to make the place available for a garden, it was found necessary to cut down and clear away many of the trees which stood upon the site, and build a stone wall three feet in height as a retaining wall for the garden, which was excavated to the depth of ten feet and refilled with wild soil from the fields. The peristyle, which was built at the east end of the garden, is covered alternately with *Clematis paniculata*, *Lonicera halleana*, *Bignonia Madam Galen*, *Vitis odorata*, while the one facing the residence is covered with *Clematis paniculata*, with Dorothy Perkins and Lady Gay roses alternating. The various beds are planted with Phlox, alternating with red and pink Geraniums, and



The formal garden



The pool in the garden



The garden in construction



The garden front of the house



The tea-house is built overlooking the river



Rough stone steps lead to the terrace



The garden walk at "Rachelwood," Laurel Hill

"The Summer Lodge"

(Continued from page 228.)

The prices and sizes of these are as follows:

9x12, \$95.00; 9x14, \$110.00; 9x16, \$130.00; 12x16, \$145.00; 12x18, \$160.00; 12x20, \$175.00; 14x18, \$175.00; 14x20, \$195.00; 16x20, \$215.00.

These houses are also made with a steel frame overhanging roof of corrugated iron, painted on both sides with two coats of red or black mindura paint, with siding of yellow pine, dressed, matched and double-beaded both sides; and the house is varnished inside and painted outside. The floor is of two-inch plank hemlock.

Excellent garages can be bought for \$275, \$375, \$550 and \$650, ranging respectively from 10x12, 12x17 feet 6 inches; 17 feet 6 inches by 20, and 20x24.

A handsome single garage (12x18), with hip roof, pergola dip, glass panel doors, five windows and painted an attractive color can be purchased for \$295. Cheaper ones, size 10x13, with four windows, are erected for \$175; 10x15, with four windows, for \$200; 10x16, with four windows, for \$215; and 12x16, with five windows, for \$260.

A single garage resembling our illustration, Fig. 34, with hip roof, glass panel doors, five windows, size 12x18, comes to \$270. Cheaper ones, 10x13, with four windows, \$165; 10x15, with four windows, \$190; 10x16, with four windows, \$215, and 12x16, with five windows, \$300.

Garages with gable roofs are quoted at, 9x12, with three windows, \$135; 10x13, with four windows, \$155; 10x15, with four windows, \$175; 12x16, with five windows, \$225; 12x18, with five windows, \$275, and 12x24, with five windows, \$335.

Our illustrations, Figs. 31 to 35, show the style of garage

that is supplied for from \$150 up.

A very practical combination automobile and motor boat house can be purchased for \$200; and with galvanized corrugated sheathing for \$225. This house is 12 feet wide, 20 feet long and 13 feet high. The door opening eight and one-half feet allows a touring car with a top, sufficient room to enter, and there is also space for a repair bench in the interior. The sheathing is nailed to the steel frame by means of galvanized wire nails, nailing strips and screws for securing the same to the frame are supplied, as are also all the bolts, nails and hinges for the other parts of the building.

Our illustration, Fig. 36, will demonstrate that it is not impossible to purchase a delightful little conveyance for \$485.

Turning now to the question of boats, our illustration, Fig. 37, shows a practical launch with a cabin that costs only \$350, and Fig. 38 another attractive boat that can be purchased for \$280. A nice little "family launch" of 1910 model, 18 feet long, with a two H.P. engine, can be had for the small sum of \$147. Fifteen dollars extra will buy a three H.P. engine, and seventeen dollars extra, cork-filled cushions. Many persons, however, would prefer to have cushions made and covered to suit themselves, as could easily be done for this small sum.

Finally, it may be added that it is possible to rent within fifty miles of New York an acre of land for the sum of \$5.00 per year. There are many places on the Great South Bay where a portable house could be erected where the rental of land is even less than that amount.

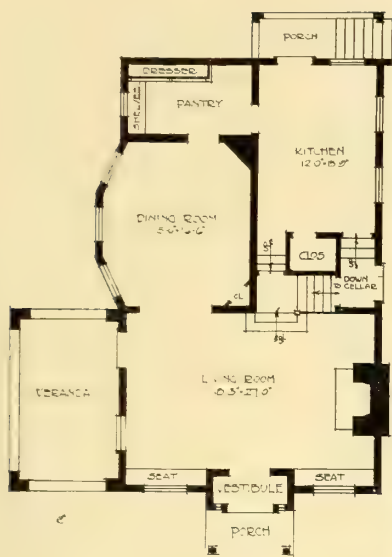


Fig. 1—First-floor plan



Fig. 2—A Colonial house

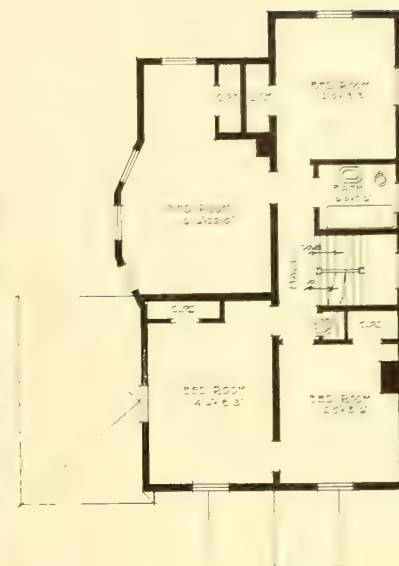


Fig. 3—Second-floor plan

Some Small Houses

By Paul Thurston



TO MEET the demand for the small house and to suggest its appropriate type are the points that constitute a building problem of both the architect and a numerous and widely distributed class of home-seekers.

In this article the writer's object has been to select several small houses for use in description and illustration that have developed from the above given condition, and his belief is that he has carried this out by the employment of some of the best examples of recent erection.

The first one, illustrated in Figs. 1, 2, 3, 4 and 5, was built for Edward Lucas, Esq., at Mount Vernon, N. Y., from plans prepared by Herbert Lucas, architect, of New York city. The owner has designed the house in a simple manner, using the detail of the Colonial style to give an effective execution. The interesting porch built at the center of the entrance front, and the small lighted windows,

carry out the desired effect. The exterior walls of the residence are covered with shingles laid with double courses and painted white. The blinds are green.

The entrance to the house is from the front porch, which has a floor laid of red cement mortar. The floor of the vestibule is also laid with a similar material, marked off in eight-inch squares.

The living-room is trimmed and finished in weathered oak, and it has a paneled wainscoting and ceiling beams. Window seats are built at each side of the vestibule, while opposite to the latter is the staircase, which ascends to the second story.

An open fireplace, built of tapestry brick laid in white mortar, with broad joints, occupies one side of the room, while French windows are built in the wall space at the opposite side, and open on to the living-porch.

The dining-room is finished in the mission style, and it has a paneled wainscoting to the height of seven feet, at



Fig. 4—The porch



Fig. 5—The front of the house

which point a plate-rack extends around the room.

The kitchen and the pantry are fitted complete, and take in the remaining space of the first floor.

The second story has a white enamel trim and mahogany finished doors. There are four bedrooms and a bathroom on this floor, and three bedrooms in the third story.

The bathroom is furnished with tiled wainscoting and floor, and porcelain fixtures, and the exposed plated plumbing is of nickel.

The cellar contains a heating apparatus, fuel-rooms, and laundry.

The house shown in Figs. 6, 7 and 8 was built for Mr. H. C. Burnham, at Kenilworth, Ill., and its exterior is covered with a white cement stucco. It has a white painted trim and a silvery gray shingled roof. Across the front of the house extends the living-room, from which the stairs to the second floor ascend. It has an inglenook provided with an open fireplace and paneled seats at each side of it. The dining-room has a buffet built in under the cluster of windows at the rear of the room. The kitchen and the pantry are fitted complete.

The second floor contains four good-sized bedrooms and a bathroom.

The heating apparatus, fuel-rooms and laundry are in the cellar.



Fig. 6—The house has gray stucco walls and white trimmings

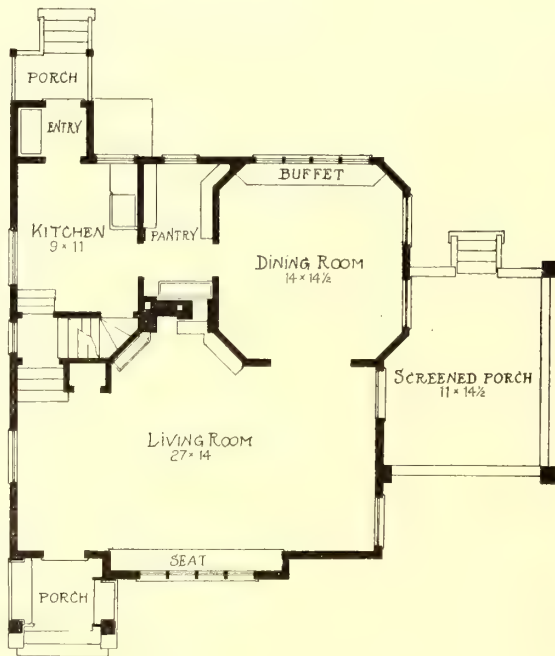


Fig. 7—First-floor plan



Fig. 8—Second-floor plan



Fig. 9—A stucco house with an entrance built at the side

Mr. Howard Bowen, of Chicago, was the architect.

The house, Figs. 9, 10 and 11, built for Edwin H. Ehrman, Esq., at Oak Park, Ill., from the plans of Lawrence Buck, architect, of Chicago, shows a very carefully studied design in its exterior treatment, as well as in its interior arrangement of the floor plans. Stucco was the material used in the construction, and the

dwelling, with its soft gray toned walls, blends well with the soft brown stain of the trim and the shingled roof.

The entrance is built at the side of the house and on the level with the street, while steps in the vestibule lead up to the level of the main floor. The hall extends across the house, terminating with a den at the opposite end.

The living-room occupies the front of the house, and is provided with an open fireplace, a paneled seat and bookcases. The dining-room and the service department are built at the rear of the house, overlook the garden, and each is furnished complete in every detail.

A feature of the ground plan is the hooded gateway, which forms a screen for the rear of the house grounds, and permits a certain amount of privacy.

The second floor contains three bedrooms and a bathroom; also a maid's room and a bathroom built over the kitchen extension and reached from

the kitchen by a private stairway. The third floor contains ample storage space and a trunk-room.

There is heating apparatus, fuel-room and laundry in the cellar.

The house, Figs. 12, 13 and 14, built for Charles Van Duesen, at Kenilworth, Ill., is finished on a square line, which is relieved by the living-porch at the side of the building, and is separated from the entrance porch at the front of the house.

The exterior of the house is built of stucco to the height of the second story window-sills. The remainder of the building is covered with shingles, stained and finished in a soft brown. The trimmings are painted white. The roof is shingled. The hall is a central one, with a living-room on one side and a dining-room on the other, beyond which are the butler's pantry and the kitchen. The second floor contains two bed-rooms and a bath-room, the latter being furnished with porcelain fixtures and exposed plumbing. The cellar contains the heating apparatus, the laundry and the fuel-rooms.

The cost of the house was \$3,100.

Mr. Howard Bowen, of Chicago, was the architect. The house presented in Figs. 15, 16, 17 and 18 was built for Mr. Harry H. Boice, at Wilmette, Ill., from plans prepared by Arthur S. Brown, architect, of Chicago, Ill.

The exterior walls are constructed of stucco with a rough caste finish. The walls are gray in tone, and the trimmings are painted white. The roof is shingled.

The entrance, reached from the porch built at the front, leads direct into the living-room, which extends across the face of the house. The room is trimmed with oak and is stained and finished in a forest green effect. From this room the staircase, which is separated by a latticed screen, rises to the second story, and is in combina-

tion with the rear stairway leading from the kitchen. The ingle-nook is provided with a fireplace built of Roman brick, with the facings and the hearth of similar material. The ceiling is beamed, and the walls are covered with a gray green wall paper.

The dining-room, which is octagonal in form, is trimmed with oak. The walls have batten wainscoting, extending up to the plate-rack. The panels formed by these battens are covered with a dull blue burlap, while the wall space above the plate-rack is covered with the

same stuff in yellow. The butler's pantry and the kitchen are fitted complete with all the best modern appointments.

The second story has a white enamel trim and the doors are finished in mahogany. The bath-room is finished with porcelain fixtures and exposed nickel-plated plumbing.

There is an open attic, in which rooms can be finished off if desired.

The cellar contains heating apparatus, fuel-rooms and laundry.

This house cost \$4,800 complete.

Mr. Charles R. Bull's house at Kenilworth, Ill., is a representative type of the stucco structure found in the

Middle West. The lines of the building are square in form, and permit of an economical construction, but are sufficiently broken by the chimney built on the exterior of the house, the two bay windows and the porch. These are details which add much to relieve the severe delineations of the exterior walls. The designing of the windows in a house of this kind is a very important matter, and the diamond panes placed in the upper sash of the windows throughout the house add to their ornamentation in a

simple manner. The exterior framework throughout is covered with stucco, finished in a soft gray tone, while the trimmings are painted a grayish white color. The shingled roof is left to weather finish.

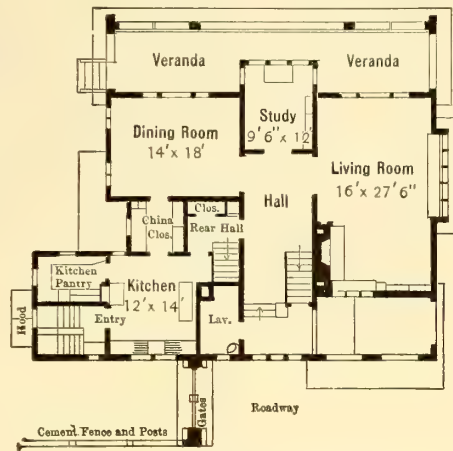


Fig. 10—First-floor plan

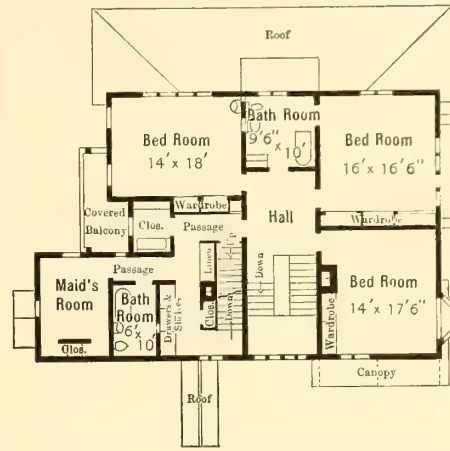


Fig. 11—Second-floor plan



Fig. 12—Stucco and shingles are the materials used in building this house

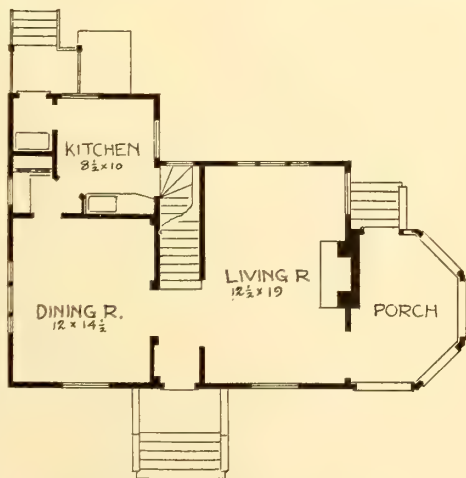


Fig. 13—First-floor plan

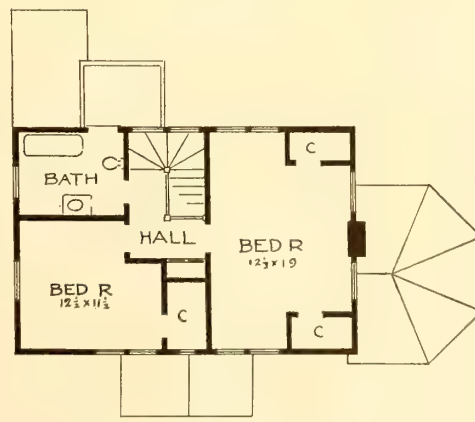


Fig. 14—Second-floor plan



Fig. 15—The house has a coating of rough cast



Fig. 16—Another view of Fig. 15

The vestibule and hall are in combination, the only division being the screen which divides the staircase from the vestibule, and which forms the balustrade of the staircase. Both the vestibule and staircase are oak finished in a Flemish brown. The walls are tinted a soft gray.

Opening from the vestibule is the living-room, which is finished in mahogany, while the walls are tinted a soft green tone. It has an open fireplace built of brick, with the facings and the hearth of a similar material, and the whole is finished with a mantel shelf.

A hood archway opens into the dining-room, which is trimmed with oak and finished in Flemish brown. It has a plate-rack extending around the room at the height of seven feet. The kitchen and the pantries are fitted complete.

The second floor has a white painted trim and doors stained and finished in mahogany. The bathroom is treated with white enamel, and is furnished with porcelain fixtures and exposed nickel-plated plumbing.

The cellar contains a laundry, a hot water heating system and fuel-rooms.

The house cost \$5,250, including the heating, gas and electric fixtures.

To build artistic houses, or even houses with some

architectural merit for a small amount of money, is one of the questions which rises in the mind of all home-builders of modest means, and particularly, to-day, when the cost of building is steadily on the increase as it has been for the past four or five years. This is a problem that the architect has to solve the best he can

for his client, and it is no easy matter to do this, for the reason that in addition to this extra cost of building there are so many modern devices for the homeseeker to install in a house at the present time that this additional expense is considerable. But as these devices are all labor savers there is no way to escape this additional outlay of money.

Every possible method of the strictest economy has to be practised, not only by the homeseeker, but by the architect to enable him to produce a house that will be a credit to him, and that will meet the requirements of the man for whom it is built.

It is to a certain extent an easy matter to build a large house when there is no limit to the expense, but when you consider that the wants of the modern family are quite equal to the man who builds a much larger house, one can readily see that the problem is a more difficult one to settle. That the architects of the houses illustrated here with have solved this problem

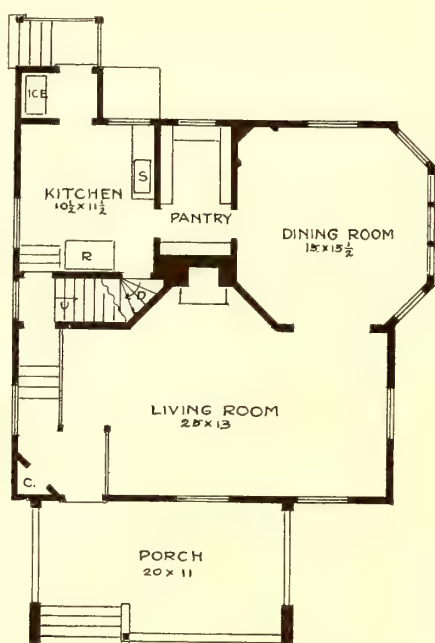


Fig. 17—First-floor plan

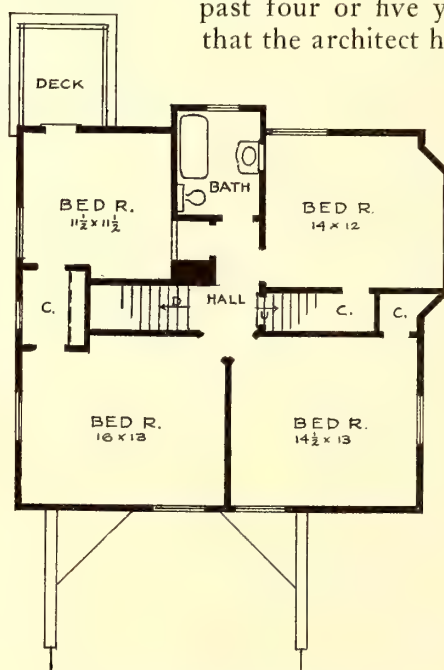


Fig. 18—Second-floor plan



Fig. 19—Small lighted windows break the severe lines of the house

is best observed by a study of the various designs and plans of the dwellings shown herewith in the engravings and which are a representative type of house now being built throughout the country. To build a small house with an exterior elevation that is artistic and distinctive, and to have an arrangement of rooms that insures good size and convenience in their relation to each other, and to be provided with all the very best modern improvements and uses for light and heat, and all the sanitary features which are necessary, for so small an amount as stated herewith, is a feat that requires much thoughtful study on the part of the architect.

The group of small houses illustrated in the engravings presented herewith, except the one shown in Fig. 2, is constructed of the same kind of material and while this is true, each one of the designs show a distinct

individuality of its own. The use of cement in the building of the small country house at the present time is an advance, from an economic point of view, of the best and the cheapest kind of material of which a house may be built with satisfaction, and is an excellent substitute for wood. It not only makes a more permanent dwelling in which to live, but when you consider the expense of keeping a wooden house well painted and in good repair it will be found in the end the cheapest form of construction.

That the architect is giving considerable attention to this kind of house is evident by the rapid improvement throughout the country in the designing of the small house, constructed of cement. That much can be done in relieving the cement house of its monotony and severity, is also well demonstrated by the uses of which cement is now being made,

in its different forms and colors. One of the principal charms of cement is that it can be molded into any form, and at the same time present a most harmonious and pleasing effect.

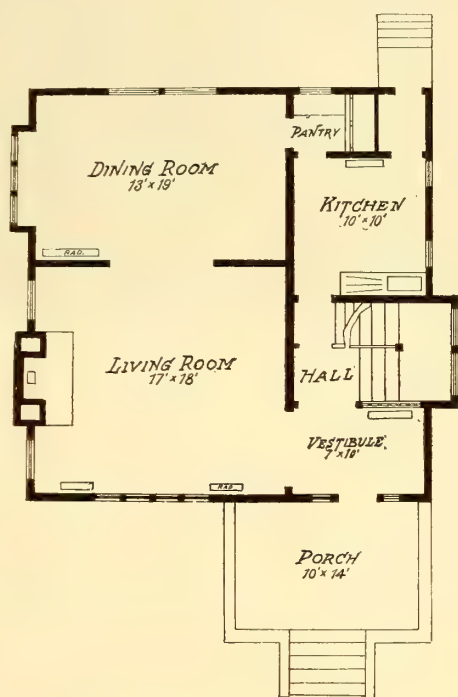


Fig. 20—First-floor plan

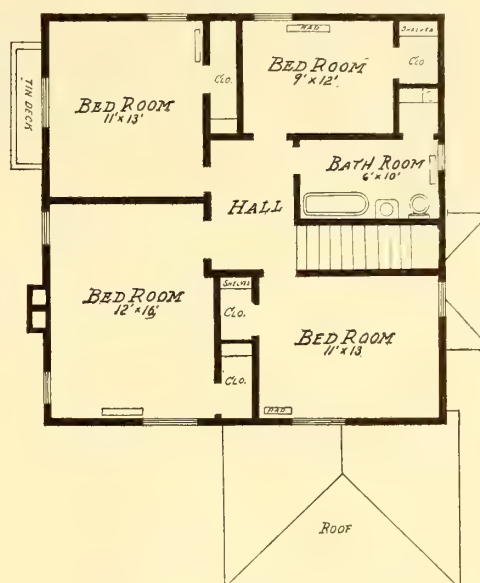


Fig. 21—Second-floor plan



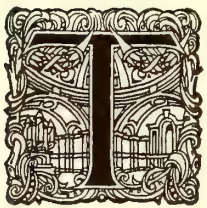
Fig. 22—Another view of Fig. 19



Garden Notes

Conducted by Charles Downing Lay

SEA SHORE PLANTING



HERE is much waste and much disappointment in the planting done on the seashore, because the trees and shrubs which will endure the hard conditions found along our coast are few, and planting anything outside of these few things is sure to end in failure.

Conditions at the seashore are hard, not only because of the high winds and the salt spray, but also because of the poor soil, which may be sandy, gravelly or rocky. A rocky shore is easier to plant, for where there are rocks there is sure to be some soil in the depressions, and that can be enriched or added to until it is sufficient to grow a tree.

On the dunes and islands from Maine to Delaware, the best deciduous shade trees are: the Ailanthus (hardest of all); the Oriental plane, which is handsomest; the sycamore maple, which needs soil a little better than pure sand; and the Norway maple, which will grow in a gravel bank. These are named in the order of their indifference to salt spray.

For border plantations, as screens or wind breaks, the wild cherry, catalpa, Carolina poplar, willows of many kinds, but especially the small *Salix pentandra*, the yellow locust and the honey locust can be used with good effect and with assurance of their perfect hardiness.

The shrub oaks which grow so luxuriantly along the coast are excellent for large plantations, and can be grown from seed if they are found difficult to transplant.

The pin oak, red oak, scarlet oak and English oaks will probably do moderately well.

On a large place the mulberry, white birch, canoe birch and hackberry might be tried, though the canoe birch seems a little out of place on the sand.

Among evergreens, the red cedar would be our first choice for ornamental or protective planting, followed closely by the pitch pine, red pine, Scotch pine and Austrian pine.

The more showy evergreens which will do well near the sea are the white spruce, Douglas spruce, Norway spruce, Colorado spruce and concolor fir. Of these the white spruce is by far the best.

There are few trees other than these which can be grown on the dunes, because it is impossible to give them anything except dry sand to grow in. Watering is of little use. You cannot water enough in a dry time, nor can you add manure or soil enough to improve the conditions very much.

It is perfectly useless to plant hemlocks or sugar maples or trees of similar tastes on the dunes.

Of the shrubs which can be used, privet is the commonest and in some respects the most useful, though I am sure that our native sumacs, bayberry, beach plum and roses are more interesting the year round, and in their season more beautiful.

Baccharis grows wild on the shore or on the edge of the marsh, and is effective in mass.

Rosa rugosa, rosa wichuraiana, lilacs, spiraea, tamarix, rose acacia and Bohemian olive will give a more dressy appearance to the place.

Barberry, elder, button bush and Indian currant can be tucked away in odd corners, and will add much to the interest of the plantations in winter.

Among evergreen shrubs, the inkberry, the holly, and the low junipers are particularly desirable.

The Virginia creeper is the hardiest and the loveliest vine. Honeysuckles are good, and are almost evergreen.

The finest carpet for sandy soil is the bearberry, which has leathery dark green leaves set close together on a long trailing stem. One plant will in time cover a large space with an unbroken carpet of green two or three inches thick. It would be easy to cover a large area with barberry, making a beautiful imitation lawn, but it would only do to look at, not to walk on, as it would not stand much wear.

Golden rod, beach pea, Hudsonia and many other weeds and grasses can be bought in large quantities from the collectors and planted in mass.

Remember that in seashore planting the object is to cover every inch of sand with something, so that there will be no drifting in the wind, no marching of the dunes, and no washing in hard rains.

Once planted and growing, everything should be left alone, until they begin to crowd and do each other harm, and every effort must be made to prevent fire, which is the greatest injury to seashore planting. The work of years can be undone in seconds by a fire rushing through the shrubbery and woods.

If you must have a lawn, give it good soil and keep it small and near the house.

If you read seed catalogs you will see among the lawn grasses red fescue recommended for sandy soil at the seashore; but this should be qualified by the statement that it does not make a good lawn. What is really meant is that it will grow and make a poor showing where nothing else will succeed. Rhode Island bent grass, *Agrostis canina*, is probably the best grass for dry, sandy soils.

For paths on the sand, try tanbark as a substitute for the soft carpet of pine needles which is such a delight under the pitch pines.



Opening the holes in the sponge so as to insert the bulbs in a proper position



The sponges should be suspended in a dark cupboard until a certain amount of growth has been made

Bulb Growing on Sponges

By S. Leonard Bastin



IN RECENT years the culture of bulbs for use in house decoration has become such an important feature that any new system is sure of receiving attention from all indoor gardeners. A very novel method which has been recently introduced with great effect is that in which the bulbs are cultivated in sponges, soil of any kind being entirely absent. It is, of course, well known that all bulbs are really little packets, each one containing so many flowers and leaves; and for the development of bloom and foliage only water is absolutely necessary, so that there is no element of magic about the latest manner of growth. At the same time, to obtain a complete success there are a number of points which it is quite essential to observe, the neglect of any of these leading to failure, as the writer has personally discovered.

First of all, one can hardly insist too much upon the importance of securing good bulbs. If you are dealing with a reliable florist, it always pays to buy the highest-priced bulbs on his list. The extra money over the cheaper sorts means more and larger flowers. Low-quality bulbs which any dealer can sell at "bargain rates" are dear at any figure, and should be avoided, especially when developing an idea like the present, when every bulb ought to throw plenty of bloom. It is wise to remember that the earlier the bulbs are planted, the sooner will they be in blossom, and this is important if the culture is to be carried through without more heat than is found in an ordinary dwelling-room.

Almost any kinds of the spring flowering bulbs are suited to the purpose, although the lighter and more graceful sorts give the most attractive effects. Thus the elegant Roman Hyacinths are certainly to be preferred above the ordinary lot which with their massive spikes would make for a somewhat heavy appearance. Crocuses, Scillas and Snowdrops look particularly charming, as also do Lilies of the Valley. Perhaps the various sorts of Narcissus are least useful on account of the exceedingly long stems which these plants produce. This difficulty may be surmounted in a measure, as will be pointed out in a succeeding paragraph.

It is, of course, a waste of money to buy expensive

sponges for this purpose, although a careful selection ought to be made. The presence of rather large holes in the sponges is a recommendation, and a fair shape in the article is important. The more each sponge appears to resemble a rough ball in pattern, the better. Size, of course, varies according to the kind of bulbs which it is desired to grow. It is quite out of the question, for instance, to attempt to grow Hyacinth bulbs on a small sponge.

Having secured the sponges and the bulbs, we may now proceed with the planting. It has been mentioned that it is an advantage to have a sponge with plenty of holes, but it is rather doubtful whether it is possible to secure one in which these are large enough, or sufficiently numerous, for the present purpose. It is a simple matter to cut fresh holes and widen existing ones in the places where it seems advisable to pop a bulb. In imagination it is well to picture which way the sponge will hang when it is suspended, as it is naturally worthless putting bulbs in right underneath. Apart from this, the bulbs should be well distributed over the sponge, so as to provide a good show when the flowers and foliage appear. It is more convenient to place the bulbs in a dry sponge, and it will be found that the natural "pinching" of the substance is quite sufficient to keep them in position. As soon as all the bulbs are in place, the supports for the suspending of the sponge must be provided. These should be fixed in the manner illustrated in the photograph, and the material may be string, or, better still, copper wire, which will neither rot nor rust. After this has been fixed, the sponges, with, of course, the bulbs in position, should be soaked in bowls of water until they are thoroughly saturated. This process must not be carried on longer than is absolutely necessary, as it is not good for the bulbs to be submerged for any length of time.

It is now necessary to secure a thorough rooting of the bulbs before they are placed in a light situation. To this end a perfectly dark cupboard should be called into requisition, in which the sponges may be suspended from the shelves. The cupboard should be in the house, where it will be quite frost free, and if it is in connection with a room which is regularly heated, so much the better. Here we must leave our bulbs for at least two months, during

which time they must be kept well supplied with water. As the weeks go by, it will be noticed that the bulbs have become firmly rooted in the sponges whilst at the same time a fair amount of top growth will have been made. It is at this stage that a little special treatment in the case of a Narcissus bulb is desirable, supposing this to have been included in the collection. The longer the dark cupboard treatment is continued, the more rapidly will the top growth of the bulbs extend so that if we give the Narcissi less time in the cupboard we shall to an extent check the production of a long, ungainly stem.

When it is decided to bring the bulbs out into the light, it is a wise plan to hang the sponges in a somewhat shady place for a few days, so as to prevent the change being too abrupt. Eventually, however, the more light is the position, the better will be the development, and a place in front of a window will not be too much exposed. In such a situation the illumination will naturally come all from one side, and in order to check an uneven development on the part of the bulbs, it is a wise plan to turn the sponges round daily, so that first of all one part is lighted, and then another. If a quantity of planted sponges is on hand, it will be desirable to arrange for a succession of bloom, and ordinary kinds of bulbs, with the exception of the Narcissi, may be left in the cupboard until they are required.

Just about this time it will be well to consider the question of obtaining some material to cover the sponge, which, of course, does not look very ornamental as a background for the shooting bulbs. As far as the writer has discovered, moss is the best material for the purpose. This should be placed in position in fairly large pieces, so as to hide the sponge completely, and it may be fastened with thin twine, the moss being simply tied on to the sponge by



Hyacinth bulbs fixed in the sponge

passing the string completely around it. If the moss is fairly thick, the tying material need not show to the smallest extent. Another method of covering the sponge, and one which gives a very pretty effect, is that of sowing grass seed all over the surface. The only drawback to this is that it is not a very easy matter to sow the seeds evenly and thickly enough to secure a uniformly good coating of verdure. Of course, if the grass is at all patchy, the whole appearance is spoilt. After all, there is little doubt that the best effects are obtained by means of the moss.

If placed in a warm living-room, the bulbs should now grow apace. A little difficulty may be experienced in keeping the moss quite fresh in the dry air of the apartment, and in order to get over this trouble the whole surface should be freely sprinkled with water two or three times a day. Of course, it is very important to keep the sponge in a moist condition, as

when the bulbs start to grow they will require an increasing amount of water. As the shoots continue to extend, it will be seen that the leaves from the lower bulbs curve up in a graceful fashion. It is not advisable to hang the sponges in the direct sunshine, as this will have a bad effect upon the moss. When the blossoms are fully displayed, the sponges may be used with charming effect in any part of the room, where they will last in their full beauty for a long while.

After the flowering of the bulbs, is past, they are really not much good. If planted outdoors, they may throw a feeble bloom the next season, but most of them will simply decay. In any case, it is quite essential to purchase fresh bulbs every time the sponges are planted, if a good effect is desired. Of course, after use the sponges should be freed from dirt and then stored away in a dry condition, where they will be ready for use the next season.



Lily of the valley growing in a sponge



Hyacinth growing in a sponge



The early stage of the bulb growth

Home-Made Perfumery

By George Ethelbert Walsh



THE art of the perfumer is not so profound a secret that the ordinary person who owns land suitable for flower cultivation cannot undertake to manufacture perfumery both for home and commercial uses. Perfume making has never reached great proportions in this country, although years ago the Department of Agriculture attempted to encourage it, and even made an extensive collection of data to show that equally as fine roses, tuberose, and similar flowers can be raised in this country as in the little town of Grasse, the perfume center of France and of the world. It was shown that in Florida, California, and many of the South Atlantic States, flowers suitable for making perfumery could be raised on an extensive scale without much difficulty, but as the result of this movement very little perfumery is made to-day for commercial purposes.

Any of our highly-scented flowers are suitable for making perfumery, and the process of extracting the odor from them is simple. In the manufacture of different perfumes, the question of extraction depends a good deal upon the nature of the plants. The different processes are distillation, compression, and maceration. Such odors as lemon and bergamot are obtained by distillation, and others by hydraulic pressure. But the ordinary perfume of jasmine, tuberose, and violets is obtained by maceration. This consists of soaking the flowers in heated fat, and in time they are taken off and replaced by others.

The more delicate flowers are best handled by the *enfleurage* process. Pure sweet lard or tallow grease is spread on a tray of glass, and when cool the surface is covered with the freshly gathered petals of the flowers to be treated. The tray is thickly covered with the blooms, and then set away in a dry place. The flowers in time are replaced by fresh ones, and the process repeated until the grease has absorbed all of the odor. The whole process of *enfleurage* depends upon the power of lard or tallow grease to absorb and retain the odors of the blooms, and then upon the equally important virtue of pure alcohol to extract the odors from the fat. When this fat, heavily laden with the odors, is placed in a bottle of alcohol, it parts with the fragrance and leaves it in the alcohol. By straining off the liquid from the fat, a pure essence or odor is obtained.

The best flower to experiment with for home use is the tuberose, because of its powerful fragrance. A square wooden frame, with a pane of glass set in the lower part, should be made. The frame should be at least two inches deep, to hold the flower petals. The glass surface is covered with half an inch of pure, sweet lard or squares of mutton fat. The flower blooms should be collected early in the morning, when the dew is on them, and immediately transferred to the tray. They should be piled several layers deep, and pressed down firmly by laying another pane of glass on top. A number of such trays should be used, so that a considerable amount of perfume can be made. On the following morning a fresh supply of blooms should replace the old, and the operation continued for a week. At the end of that time, the fat should be so saturated with the odors that it is ready for the alcohol bath. When placed in the alcohol, the bottle or jar should be sealed up tight. A few hours is sufficient for the alcohol to extract most of the odors, but usually twenty-four hours

are required for complete absorption. At the end of that time the mixture is to be strained. To prevent evaporation or loss of the odors, the straining should be done rapidly and in a wide-necked bottle or jar. Suspend a double thickness of fine cheese cloth in the mouth of the jar, and then place the mouth of the bottle containing the alcohol close to it. By pouring rapidly, and corking immediately after straining, it is possible to separate the odors from the fat without much loss. Here is the basis of modern perfume corked up ready for use. Its strength, of course, depends upon the amount of flowers used. The volatile alcohol carries with it the perfumery which one extracts from the flowers.

In the maceration process the petals of the flowers are bruised before they are immersed in heated grease. Orange flowers and orange and lemon peel can be bruised and then mixed with heated grease, either pure lard or olive oil, and then mixed with alcohol to extract the odors from the grease. Orange peel or lemon peel rubbed against some sharp instrument, which will break the small cells, parts with most of its odor when immersed in heated olive oil. Many kinds of barks and fruits can be treated this way, although peppermint, sassafras and the other standard perfumes of this class have their odors extracted chiefly by distillation.

Lavender is imported into this country in great quantities from England for sachet and perfumery uses, but it grows with little care in most parts of this country. Lavender leaves, when properly dried, retain their odor indefinitely, and the fragrance is one that most people like. A small garden of lavender would yield probably as much satisfaction to the average woman who enjoys perfumery as any other plant. Lavender odor can be extracted in the same way as that of violets and tuberose, but most of the lavender used is in the dried form. The cultivation of lavender for perfume should prove a most fascinating as well as profitable work for one with a small flower garden. The fragrance of the plants fills the kitchen garden during the growing season, and when harvested in the fall the whole place is scented with it.

The roses used for making the attar of roses in Europe are the red damask of Bulgaria and the hundred-leaf or cabbage rose of Provence, in Southern France. Until recent years these roses were supposed to possess unusual virtues which could not be duplicated elsewhere, and for years it was not thought possible that attar of roses could be made in this country. This, however, is a mistake. While the climate of parts of Europe may develop the roses to an unusual degree, it is a known scientific fact that roses raised in the Southern States of this country equal any of those in Europe. The famous Gloire de France rose, which is so generally cultivated in this country, has the true odor of attar of rose, and it could be made productive of a commercial perfume farm. It is a perfect bloomer in the Southern States, and very hardy. In our Northern States it can be raised in sufficient quantity to make home-made perfumery a delightful occupation. The rose gardens of California have long produced abundant bloomers suitable for perfumery manufacturing. A number of people make perfumery on the Pacific Coast for local trade, and some of the Southern States have entered into the business in a small way.

Oil of geranium is a common basis of many of our per-

fumes, and this can be extracted from three of our most common and productive geraniums found in most gardens. They are the rose geranium, the nutmeg and the skeleton-leaved geraniums. Their culture is so easy that amateurs raise them without difficulty. A garden filled with these geraniums would yield a considerable quantity of oil of geranium. Most of the oil of geranium used by perfume manufacturers comes from Algiers, Italy, Corsica and Spain. The oil is extracted from the plants by distillation or maceration. Sometimes the oil is obtained by simple expression from such substances as orange and lemon peel, but this would hardly prove satisfactory for geraniums.

Tuberoses, violets and jasmines have always proved the most generally popular of perfumes for the multitudes, and they have been extracted from flowers raised in this country in the most satisfactory way. Some of these perfumes made on a Florida flower farm sold for one dollar an ounce in New York a few years ago. Near Jacksonville a flower farm was established for the purpose of demonstrating the value of American-grown flowers for perfume making, and dealers in perfumery offered to take all the product. But for some reason the experiment was never carried on for a great while. It showed, however, a possible opening for those who enjoy flower gardening and perfumery making.

The manufacture of oils from sassafras and wintergreen has been developed in this country, and a considerable trade built up. But few other plants and flowers which yield delicate and strong odors have been properly exploited here. We let dozens of our valuable plants grow wild in our gardens and woods, without thought of their value, while our perfume manufacturers spend thousands of dollars to import the oils and extracts derived from them. Thus our perfume of "new-mown hay" has as its basis the "deer tongue" which flourishes so generally in Virginia, Florida, and Carolina. The sweet bay and swamp laurel possess virtues which make them of value to the perfume maker. The common snake root of Canada and the northern part of our own country has an aromatic

oil that is used by perfumers for strengthening their extracts.

Synthetic chemistry has imitated many of our natural perfumes, and it is the boast of the chemist that he can make any odor or scent that is used in the trade, using as his basis some such common articles as the coal-tar products, potato peels, or sugar beets. But while perfumery is affected more or less by the development of synthetic chemistry, the true odors of the flowers and plants must continue to form the basis of the trade. They are not in danger of being supplanted by any means. So long as we enjoy the odors of sweet roses, jasmine, and violets, these flowers will be grown for commercial purposes. In the little town of Grasse, France, upward of ten billion pounds of flowers are annually converted into perfumery. We pay some two million dollars a year to Europeans for raising and extracting perfumes which could be made right at home.

It was common in old New England days for every housewife to have her sweet herb garden, where she raised her thyme, sage, fennel, and lavender. These were gathered and dried for winter use. Old bureaus were heavily scented with the fragrance of their dried leaves. The abandonment of this practice is to be regretted. It is partly due to the modern ease of obtaining all such products at the druggists. One does not have to raise medicinal herbs or sweet-scented herbs for household use. But a return to the old custom would prove far more satisfactory. The flowers and herbs gathered fresh and put away in the home retain far more of their fragrance than those bought at the drug store. They add to the home a delicate, grateful fragrance which seems to pervade every nook and corner.

Fortunately, a revival of the old custom is being agitated, and many herb and flower gardens are found to-day whose odors are destined to be preserved for winter use. Either the dried leaves and flower petals are gathered fresh and kept in air-tight jars, or serious attempts are made to extract the fragrance in the regular commercial way of maceration or *enfleurage*. With ample practice in doing the latter, a sufficient amount of skill will in time be attained.

Garden Pests

By E. P. Powell



HAVE met in my life a long list of rivals—every horticulturist has had the same experience. Every one of these claimed what I claimed, and I could not see but what they had as good a right as myself, if they could beat me. Among the most persistent were English sparrows, and hawks, out of the air; mice, rats, turtles, moles, gophers, out of the ground, and no end of beetles and bugs and flies and bees. Remember, however, that nearly every one of these creatures it is possible to utilize. Moles are very rarely a pest, and then only by upsetting the plants which we have set in their tracks. Their mission is a good one, that of devouring grubs. I never kill them if I can. When the May beetle emerges (every third year), you will find that the moles have in some way found out that they are to appear, and have multiplied accordingly. The presence of lice on our plants in some way calls for an enormous development of bees and hornets, to either feed on the lice, or on the honeydew that they make.

When we have eliminated from our list creatures of this sort, that can frequently be utilized, we have left the English sparrow and the blackbird and the crow. I should like to say a kind word for all three of these fellows, and I believe the crow does do some good. The blackbird becomes

a scavenger sometimes, and changes his wild habits to cleaning up cities. I have seen this change of character more frequently in the Western towns, and it seems to come about from a change of environment, the crowding of other creatures into the usual field habitat of the blackbird. The English sparrow probably changed his habits for the same reason, but is an unmitigated nuisance. Now let me tell you how to get rid of him. In the first place, make it a regular business to break up their nests if they come to your buildings or trees; then let them understand that they will be shot if they come over your lines; finally let all the song birds and valuable birds find that your homestead is a safe retreat. You will be surprised to find how soon they will join in the battle, and make it nearly impossible for a sparrow to show himself within their demesnes. At my Clinton home the sparrows are to be found, jabbering and quarreling all over the homesteads adjacent to mine, but while we do occasionally hear one inside the lines, they never venture to undertake anything like an aggressive footing.

If our country homes would unite on this basis, we should get two grand results: we would rid ourselves of the sparrow, and would secure the presence of catbirds, bluebirds, indigo birds, song birds, grossbeaks, cardinal birds and robins.



CORRESPONDENCE



The Editor of *American Homes and Gardens* desires to extend an invitation to all its readers to send to the Correspondence Department inquiries on any matter pertaining to the decorating and furnishing of the home and to the developing of the home grounds.

All letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this Department.

Problems in Home Furnishing

A DINING-ROOM FLOOR COVERING

FROM Tennessee comes a description of a dining-room floor for which it is difficult to find a rug in the ready-made article. "This room is very long and very narrow, with a hearth that adds still further to its peculiar spaces. In the winter we will use the narrow end farthest from the windows, and in the summer move the table into the wide space. Would you use several rugs of ordinary size in this room? Or can you suggest something better?"—G. D. D.

From the diagram inclosed, this dining-room would require a rug about eight feet wide by twenty-three feet long. The best plan would be to have a rug made from carpet of as good a quality as can be afforded. Three widths and the border on each side would make a rug eight feet three inches wide, and the length could be whatever gives the same margin of floor at the ends as the width allows at the sides. In Brussels, such a rug could be made for about fifty dollars. With the floor covered in this way, the dining table may be used in either part of the room, and moved whenever desired, without disturbing the rug.

SLIP COVERS FOR PORTIERES

"I have heard of a new way of covering handsome portieres in the summer months with cretonne to match the slip covers on the furniture. How is this done? I have no available place to pack away my winter over-curtains and portieres, and as we use our home during most of the summer, it would be an advantage to keep up some kind of door curtain. I have never cared for the striped linen covers that are usually put over chairs to protect them from the dust."—F. E.

The curtain and portiere bags are used particularly in apartments where there is no place for packing away furnishings of this kind, and also give some decoration during the summer months, instead of showing bare-looking spaces. A pretty cretonne that harmonizes with the wall-paper is selected, and the width used on either side of the curtain, with the bottom sewed together and the tops hemmed and one buttoned over the other. The curtain rings keep their usual place, and the portiere is pushed to one side when incased in the bag. Heavy winter curtains are treated in the same way. If the material is too light-colored for the chair and sofa covers, a darker pattern may be chosen for the latter. For the tops of the tables there is a cotton damask with a swansdown backing that can be made into a cover with a six-inch valance all around. Sofa pillows are also covered for summer use in a washable fabric, and muslin or fish-net curtains take the place of the lace. The enjoyment of a home during the hot weather is so much greater with some attention paid to beautifying it, while still taking care to protect it from the pervading dust that the trouble and expense are well worth while.

FOR A BRIDE'S PRESENT

Some suggestion for a wedding gift is asked for from a reader who lives at some distance from any large city. As the bride is to begin to make a home, there will be no difficulty in finding something really useful and acceptable. In furniture, there are small occasional tables, muffin stands, sewing stands, card tables, sewing rockers, reading chairs, benches, plant stands and taborets. In lamps, there are various kinds for reading, decoration and general use. An attractive pillow cover can always be made available. Also, small covers and mats for tables, linens for bureaus and dressing tables. A water set for a guest-room is more novel than the usual selection in silver. Pieces of copper and brass fit into almost any home nowadays. Holders for cut flowers and plants are especially helpful in a country or suburban home. A sun dial was lately chosen for a wedding gift, and garden pottery will probably be the next thought.

OLD DOOR-KNOCKER AND LATCH

"In buying a little old farmhouse in Connecticut," writes Mrs. J. I. R., "we are disappointed to find that the original door latch and knocker have been removed. We have scoured the country around, but cannot find one that suits us. Would it cost very much to have these articles made to order? Someway, the modern door knob does not satisfy us."

It is not necessary to have a special latch and knocker made (which would be quite expensive), as the reproductions can be had at a comparatively small cost—about five dollars for the latch and three for the knocker.

FURNISHINGS FOR A GIRLS' CLUB ROOM

"Is it within your province to suggest some attractive furnishings for a room in a private house that will be used quite exclusively by a club of young girls? The club colors are pink, white and blue, but it is not essential to have these appear. The floor is covered with a Japanese matting, and there is a round table for tea things and a writing desk. This is all that is ready at present. There are three small windows close together, with a deep window sill, and a small fireplace. What can be added to make the room really cosy and home-like?"—The Committee on Furnishing.

The open fireplace may be the starting point for achieving the attractive interior desired in this club room. A set of brass andirons, with shovel, tongs, poker and fire screen may claim the first outlay. Some receptacle for wood—a willow basket or chest—is also needed. A hearth rug and some small rugs may be laid over the matting in front of the larger pieces of furniture. A willow settle with cretonne cushions and pillows may be drawn near the fireplace with the tea table near. Some reproductions of the old rush-seated chairs may be had now for five dollars each, and these will give character to the room.

Garden Work About the Home

TEMPORARY VINES FOR THE PERGOLA

R. L. S. asks what can be done to cover a pergola with vines in one season?

THE difficulty is a puzzling one, because to plant annual vines with the permanent ones is likely to be an injury to the latter, and annual vines anyway are unsatisfactory. You had better plant the permanent vines at once, and give them the best care. While they are small, for the first season, at any rate, you can grow gourds, hop vines or any rapid growing things in boxes, and direct their growth away from the permanent vines and to the highest parts of the pergola. In this way you will get a good cover which will not retard the final result.

TURF TENNIS COURTS

"What must we do to have a good turf court? The only place where we can have it is the most prominent in the landscape, and the young people want a dirt court there; but now that turf courts are becoming more fashionable, we have compromised and agreed to build one."—H. P. W.

As perfect turf is only to be had on a deep, rich soil, the whole success of your court depends upon thorough trenching, and, if necessary, adding soil until it is at least two feet deep. In the May number of *AMERICAN HOMES AND GARDENS* there was a description of the best processes for making a good lawn, and the operations described there should be followed, except that the quantity of seed should be increased.

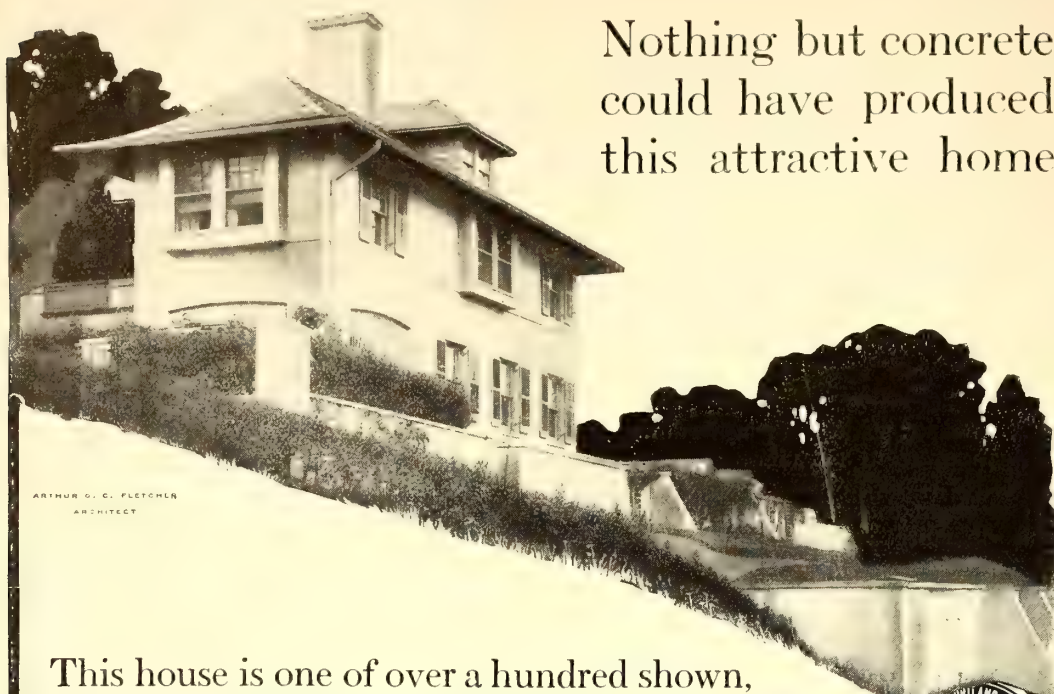
Another factor in making a perfect court is abundant water. Our long droughts are the only reason why we cannot have as perfect tennis lawns in this country as they have in England.

The court should be arranged so that it can be flooded with water two or three inches deep, or, even better, it should be underlain by irrigating tile, 3 inches in diameter, 18 inches deep, and 6 feet apart, laid crosswise of the court. The ends of these tiles should be connected with a line of 6 inch tile, with an opening at the middle where a 2 inch hose can be connected. The cross drains should slope only a little from this side to the connecting drain on the other side, which must have a gate valve which can be closed. In a dry time, fill the pipes rapidly with water which will gradually seep through the joints and water the lawn more effectively than it could be done from the surface.

In a wet season these same tiles will act as drains if the gate is opened.

A GOOD COMBINATION

Planting yucca filamentosa and red-hot poker together is an excellent plan, because they bloom at different seasons, the yucca in July and the red-hot poker from September on. The yucca takes up much room in the garden beds, whereas the Tritoma needs very little. Both are tall, and both are hard to arrange in the garden scheme, and both are indispensable.



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CANNING AND PRESERVING FRUIT

HINTS FOR THE HOUSEWIFE—II*

By Marie Parloa

Continued from Homes and Gardens May
Number, page xx.

CANNING FRUIT.

The success of canning depends upon absolute sterilization. If the proper care is exercised there need be no failure, except in rare cases, when a spore has developed in the can. There are several methods of canning; and while the principle is the same in all methods, the conditions under which the housekeeper must do her work may, in her case, make one method more convenient than another. For this reason three will be given which are considered the best and easiest. These are: Cooking the fruit in the jars in an oven; cooking the fruit in the jars in boiling water; and stewing the fruit before it is put in the jars. The quantity of sugar may be increased if desired.

It is most important that the jars, covers, and rubber rings be in perfect condition. Examine each jar and cover to see that there is no defect in it. Use only fresh rubber rings, for if the rubber is not soft and elastic the sealing will not be perfect. Each year numbers of jars of fruit are lost because of this false economy in using an old ring that has lost its softness and elasticity. Having the jars, covers, and rings in perfect condition, wash and sterilize them.

Have two pans partially filled with cold water. Put some jars in one, laying them on their sides, and some covers in the other. Place the pans on the stove where the water will heat to the boiling point. The water should boil at least ten or fifteen minutes. Have on the stove a shallow milk pan in which there is about two inches of boiling water. Sterilize the cups, spoons, and funnel, if you use one, by immersing in boiling water for a few minutes. When ready to put the prepared fruit in the jars slip a broad skimmer under a jar and lift it and drain free of water. Set the jar in the shallow milk pan and fill to overflowing with the boiling fruit. Slip a silver-plated knife or the handle of a spoon around the inside of the jar, that the fruit and juice may be packed solidly. Wipe the rim of the jar, dip the rubber ring in boiling water and put it smoothly on the jar, then put on the cover and fasten. Place the jar on a board and out of a draft of cold air. The work of filling and sealing must be done rapidly, and the fruit must be boiling hot when it is put into the jars. If screw covers are used, it will be necessary to tighten them after the glass has cooled and contracted. When the fruit is cold wipe the jars with a wet cloth. Paste on the labels, if any, and put the jars on shelves in a cool, dark closet.

In canning, any proportion of sugar may be used, or fruit may be canned without the addition of any sugar. However, that which is designed to be served as a sauce should have the sugar cooked with it. Fruit for cooking need not have the sugar added to it.

Juicy fruits, such as berries and cherries, require little or no water. The only exception to this is when they are cooked in a heavy syrup.

(Continued on page xiv)

* Reprint of Farmers' Bulletin 203, issued by the Department of Agriculture.

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Any wood; any
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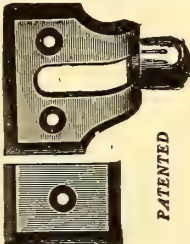
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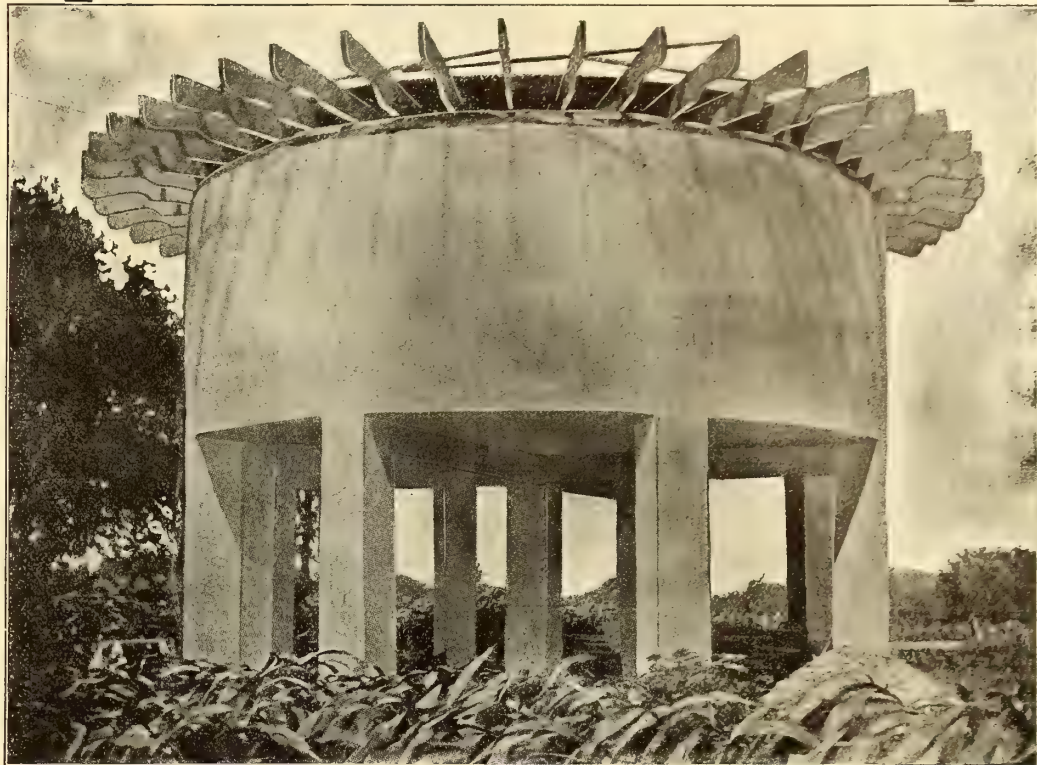
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FLOORS

NOTE CONTINUOUS BOND

ROOFS



A concrete tank erected on estate of Edmund Tatham, Katonah, New York

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CLEVELAND, OHIO: Carl Horix, 428 Garfield Building

ST. LOUIS: Hunkins-Willis Lime & Cement Co.
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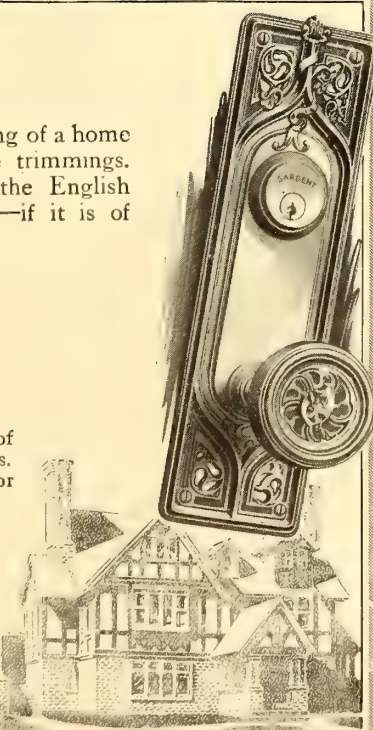
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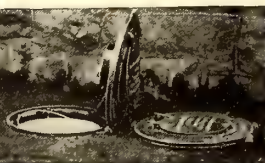
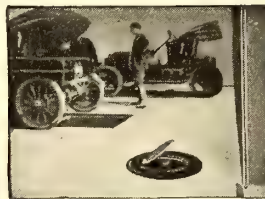
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Raspberries.

12 quarts of raspberries.

2 quarts of sugar.

Put two quarts of the fruit in the preserving kettle; heat slowly on the stove; crush with wooden vegetable masher; spread a square of cheese cloth over a bowl, and turn the crushed berries and juice into it. Press out the juice, which turn into the preserving kettle. Add the sugar and put on the stove; stir until the sugar is dissolved. When the syrup begins to boil, add the remaining 10 quarts of berries. Let them heat slowly. Boil ten minutes, counting from the time they begin to bubble. Skim well while boiling. Put in cans and seal as directed.

Raspberries and currants.

10 quarts of raspberries.

3 quarts of currants.

2½ quarts of sugar.

Heat, crush, and press the juice from the currants and proceed as directed for raspberries.

Blackberries.

The same as for raspberries.

Currants.

12 quarts of currants.

4 quarts of sugar.

Treat the same as for raspberries.

Gooseberries.

6 quarts of berries.

1½ quarts of sugar.

1 pint of water.

For green gooseberries dissolve the sugar in the water, then add the fruit and cook fifteen minutes. Ripe gooseberries are to be treated the same as the green fruit, but use only half as much water. Green gooseberries may also be canned the same as rhubarb.

Blueberries.

12 quarts of berries.

1 quart of sugar.

1 pint of water.

Put water, berries, and sugar in the preserving kettle; heat slowly. Boil fifteen minutes, counting from the time the contents of the kettle begin to bubble.

Cherries.

6 quarts of cherries.

1½ quarts of sugar.

½ pint of water.

Measure the cherries after the stems have been removed. Stone them or not, as you please. If you stone them be careful to save all the juice. Put the sugar and water in the preserving kettle and stir over the fire until the sugar is dissolved. Put in the cherries and heat slowly to the boiling point. Boil ten minutes, skimming carefully.

Grapes.

6 quarts of grapes.

1 quart of sugar.

1 gill of water.

Squeeze the pulp of the grapes out of the skins. Cook the pulp five minutes and then rub through a sieve that is fine enough to hold back the seeds. Put the water, skins, and pulp into the preserving kettle and heat slowly to the boiling point. Skim the fruit and then add the sugar. Boil fifteen minutes.

Sweet grapes may be canned with less sugar; very sour ones may have more.

Rhubarb.

Cut the rhubarb when it is young and tender. Wash it thoroughly and then pare; cut into pieces about 2 inches long. Pack in sterilized jars. Fill the jars to overflowing with cold water and let them stand ten minutes. Drain off the water and fill again to overflowing with fresh cold water. Seal with sterilized rings and covers. When required for use, treat the same as fresh rhubarb.

(Continued on page xvi)



Dry Clothes Indoors

NO matter what the weather, you can dry your clothes as white and sweet as a day in June, with the "Chicago" or "Chicago Francis" combined dryer and laundry stove. It costs nothing to operate as the laundry stove you use to boil clothes and heat irons supplies the heat which you now waste. Stove for wood, coal or gas.

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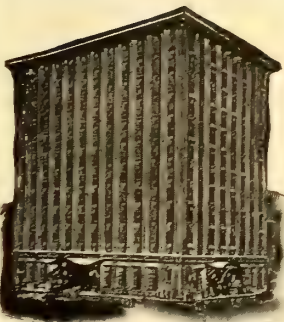
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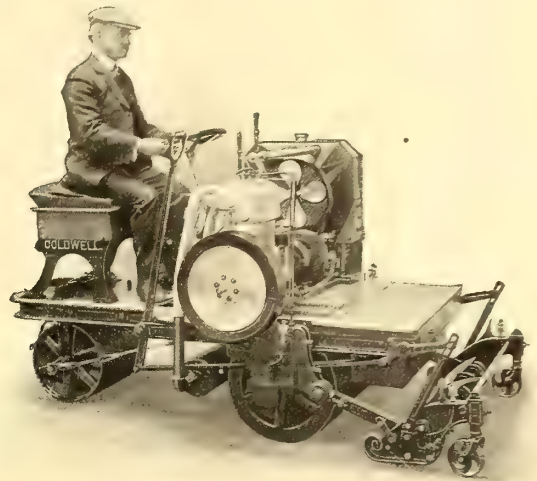
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that will thoroughly roll it.
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that leaves it just like velvet with no horse markings.
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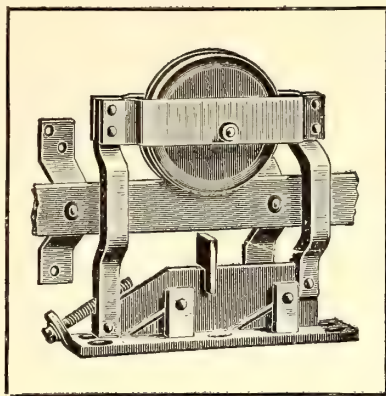
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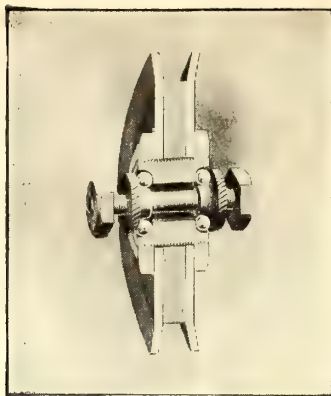
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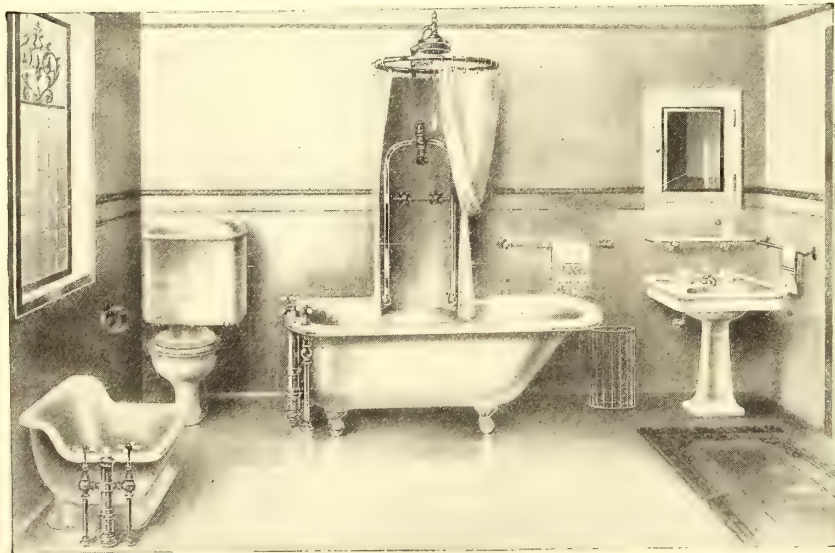
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Green gooseberries may be canned in the same manner. Rhubarb may be cooked and canned with sugar in the same manner as gooseberries.

Peaches.

8 quarts of peaches.
1 quart of sugar.
3 quarts of water.

Put the sugar and water together and stir over the fire until the sugar is dissolved. When the syrup boils skim it. Draw the kettle back where the syrup will keep hot, but not boil.

Pare the peaches, cut in halves, and remove the stones, unless you prefer to can the fruit whole.

Put a layer of the prepared fruit into the preserving kettle and cover with some of the hot syrup. When the fruit begins to boil, skim carefully. Boil gently for ten minutes, then put in the jars and seal. If the fruit is not fully ripe it may require a little longer time to cook. It should be so tender that it may be pierced easily with a silver fork. It is best to put only one layer of fruit in the preserving kettle. While this is cooking the fruit for the next batch may be prepared.

Pears.

If the fruit is ripe it may be treated exactly the same as peaches. If, on the other hand, it is rather hard it must be cooked until so tender that a silver fork will pierce it readily.

Quinces.

4 quarts of pared, cored, and quartered quinces.
1½ quarts of sugar.
2 quarts of water.

Rub the fruit hard with a coarse crash towel, then wash and drain. Pare, quarter, and core; drop the pieces into cold water. Put the fruit in the preserving kettle with cold water to cover it generously. Heat slowly and simmer gently until tender. The pieces will not all require the same time to cook. Take each piece up as soon as it is so tender that a silver fork will pierce it readily. Drain on a platter. Strain the water in which the fruit was cooked through cheese cloth. Put two quarts of the strained liquid and the sugar into the preserving kettle; stir over the fire until the sugar is dissolved. When it boils skim well and put in the cooked fruit. Boil gently for about twenty minutes.

Crab Apples.

6 quarts of apples.
1½ quarts of sugar.
2 quarts of water.

Put the sugar and water into the preserving kettle. Stir over the fire until sugar is dissolved. When the syrup boils skim it.

Wash the fruit, rubbing the blossom end well. Put it in the boiling syrup, and cook gently until tender. It will take from twenty to fifty minutes, depending upon the kind of crab apples.

Plums.

8 quarts of plums.
2 quarts of sugar.
1 pint of water.

Nearly all kinds of plums can be cooked with the skins on. If it is desired to remove the skins of any variety, plunge them in boiling water for a few minutes. When the skins are left on, prick them thoroughly to prevent bursting.

Put the sugar and water into the preserving kettle and stir over the fire until the sugar is dissolved. Wash and drain the plums. Put some of the fruit in the boiling syrup. Do not crowd it. Cook five minutes; fill and seal the jars. Put more fruit in the syrup. Continue in this manner until all the fruit is done.

(To be Continued.)

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THISTLE-INE is a positive and thoroughly effective
destroyer of weeds and all undesirable growth, any-
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doing more effective work than twenty men with hoes
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Six-pound can THISTLE-INE (paste form) makes 6
gallons liquid--sufficient to spray 5,000 square feet.
Price, \$2.00--at your dealer's, or direct from us if your
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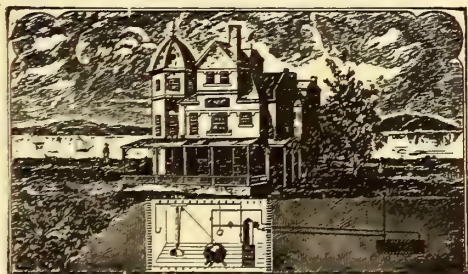
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Magic Weed Destroyer

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this way: First fill the tube with gasoline,
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deposits a little liquid on the raw end of
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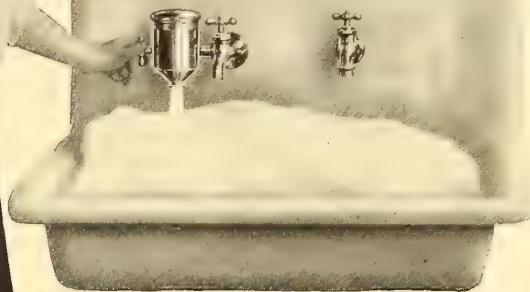
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thick, hot suds. It does not in any way interfere with the hot water
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steps every day--to always
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sightly soap dishes, to the
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odds and ends of soap. Use
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we will forward by express prepaid one RICHMOND Suds-Maker. Use it ten days--then if you
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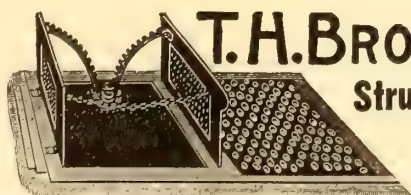
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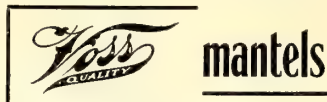
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This book tells how to select the home Refrigerator—how to know the poor from the good—how to keep down ice bills. It also tells how some Refrigerators harbor germs—how to keep a Refrigerator sanitary and sweet—lots of things you should know before buying ANY Refrigerator.

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BOOK REVIEWS

RADFORD'S GARAGES AND HOW TO BUILD THEM. Selected and compiled by William A. Radford. Chicago and New York: The Radford Architectural Company, 1910. Pp. 108; 55 designs. Price, \$1.

This collection of garage designs contains many new, original, and artistic examples of up-to-date private and public structures for the housing of automobiles, and permits considerable latitude in the choice of material to be used in the construction. The various designs include the use of wood, brick, stone, cement, stucco, and concrete. The compiler, as president of the Radford Architectural Company of Chicago, and the author of various books on architecture and building, is well qualified for the work he has undertaken in the present volume. Many of the designs are of pleasing architectural novelty and are adapted to the various requirements of up-to-date construction, and the latest approved materials used in modern building practice. Nearly sixty different garage designs are illustrated, and the constructive cost ranges from \$400 to \$2,000 for the smaller private garages, up to \$3,000 for the larger private garages; while the public buildings of this kind, equipped with the latest approved modern accessories and conveniences, run in cost from \$3,000 to \$11,000.

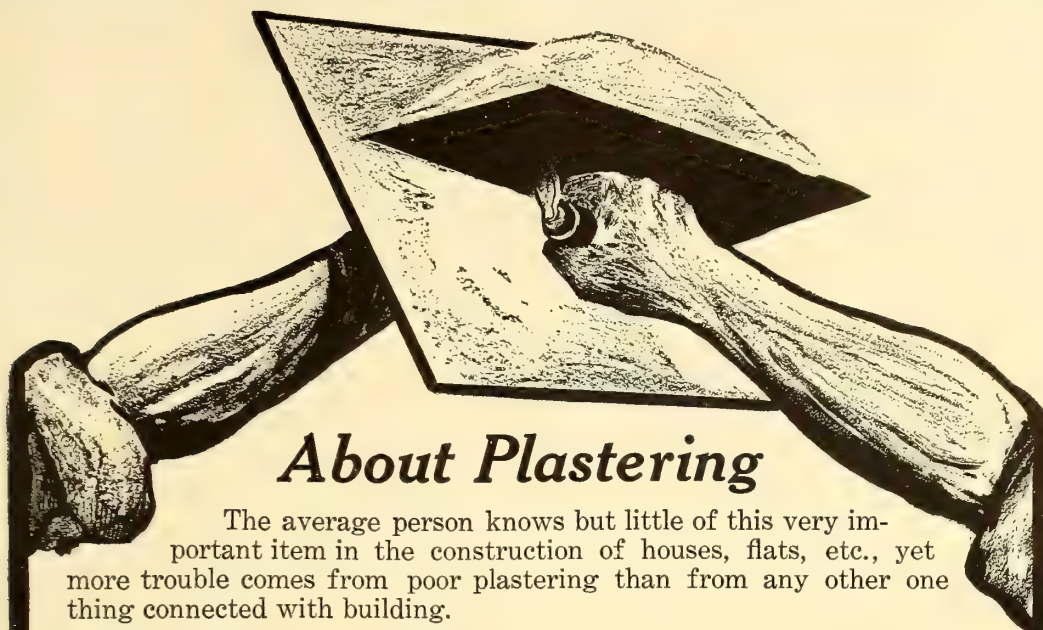
The book also includes a useful section covering garage equipment and accessories. This division illustrates a number of novel and useful appurtenances for different purposes in the garage itself.

AUTOMOBILE DRIVING SELF-TAUGHT. By Thomas H. Russell, M.E., LL.B. Chicago: The Charles C. Thompson Company, 1908. 12mo.; 222 pp. Price, \$1.

As comfort and safety in automobiling depend to a very large extent upon the skill of the driver, it should be the aim of every one who intends to drive a car to acquire a knowledge of the approved methods of driving. It is the object of this book to present such information in a convenient practical manner so as to make it comparatively easy for any motorist to acquire skill in the management and care of his machine. Study and practice combined will surely develop the expertness which is needed nowadays at the wheel, being demanded alike by the interests of the automobilist and of the non-motoring public. The careless or ignorant driver is a menace not only to the safety of the public, but also to that of his passengers. The daily experience of every motorist demonstrates the need of carefulness in driving, and there is no longer any excuse for ignorance. The methods of driving are described in this work and those which have been found best in actual experience on the road. From these pages the motorist can learn how to start, drive and manage his car under all conceivable circumstances. Those methods of caring for the car when not in use are also plainly shown, as well as the manner in which a car should be laid up when necessary. The book appears to be a most practical one.

CONCRETE. By John C. Trautwine, Jr., and John C. Trautwine, Third, Civil Engineers. New York: John Wiley & Sons, 1909. 16mo. Price, \$2 net.

Trautwine's Civil Engineer's Pocketbook is too well known to need any praise at our hands. The nineteenth edition of 1909 completed the hundredth thousandth copy, which is a phenomenal sale for a scientific and technical book. In fact, we believe this



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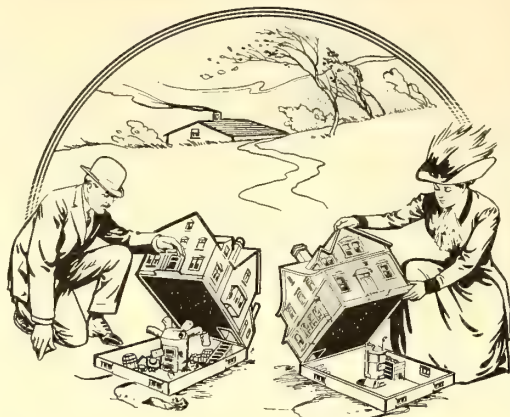
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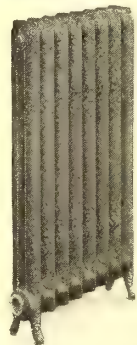
A No. 22 IDEAL Boiler and 240 ft. of 38-in. AMERICAN Radiators, costing the owner \$115, were used to Hot-Water heat this cottage.



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THE DESIGN AND EQUIPMENT OF SMALL CHEMICAL LABORATORIES. By Richard K. Meade, B.S. Chicago: The Chemical Engineer Publishing Company, 1908. 12mo.; 136 pp. Price, \$2.

It very often happens that the young chemist, perhaps fresh from college, is called upon to design and equip a laboratory when his knowledge of how it is to be done is rather meager. The experienced chemist confronted with the task can usually bring to bear upon the subject sufficient practical knowledge gained from other laboratories in which he has worked to arrange and equip a laboratory which will meet fully his requirements, and can do so in many instances better than anybody else can do it for him. Many things which are done in the college laboratory are impossible in the private laboratory, where means are limited; for instance, ventilation of the hoods, gas supply may be non-existent, etc. To these young chemists the suggestions in this book on the design and equipment of small laboratories are made. But even experienced chemists may gain valuable points from it. There is an extremely small amount of literature on this subject, so that a thoroughly practical book like this should be warmly welcomed.

RADFORD'S COMBINED HOUSE AND BARN PLAN BOOK. Edited by William A. Radford. New York and Chicago: The Radford Architectural Company, 1908. 4to.; 287 pp. Price, \$1.

The volume before us is a most practical one, giving designs for barns, livery stables, grain barns, dairies, cow barns, feed lofts, cattle sheds, poultry houses, implement sheds, vehicle sheds, hog houses, corn cribs, smoke-houses, granaries, tank houses, etc. The illustrations serve the purpose, although they are rather coarse. Prices for blue prints, which would enable any one to build these barns, are listed.

HANDBUCH FÜR HEER UND FLOTTE. Enzyklopädie der Kriegswissenschaften und verwandter Gebiete, herausgegeben von Georg von Alten, General-leutnant z. D., unter Mitwirkung von mehr als 200 der bedeutendsten Fachautoritäten. Complete in 108 instalments. Price per instalment, 50 cents. Berlin, Leipzig, Vienna and Stuttgart: Deutsches Verlagshaus Bong & Co.

The first three instalments of the second volume of this remarkable military and naval encyclopedia lie before us. The instalments extend from "Bayreuth" to "Beurkundung." In the care which has been taken in the individual articles, these new instalments are well up to the standard of those which we have previously reviewed. Of particular interest are the articles on benzine and benzol. The essay on Belgium may well be regarded as a model of good military writing, for it discusses clearly and masterfully the military geography, history and military system of a small but important European body politic.



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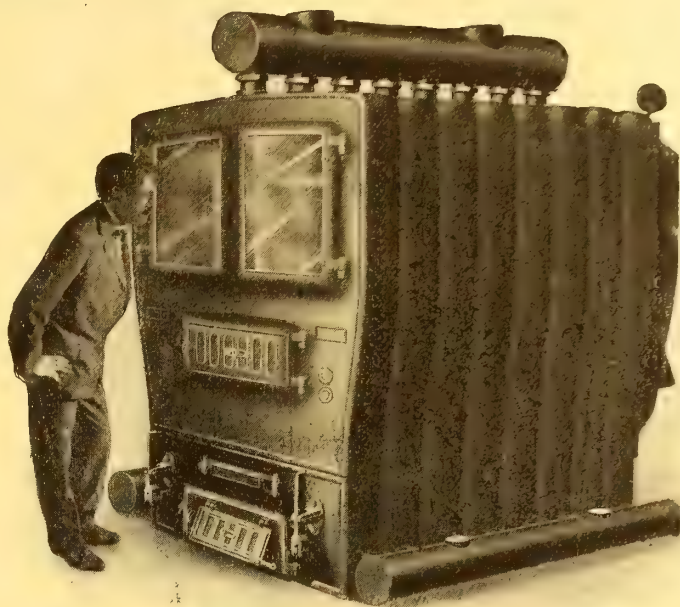
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We learned by experiment that some boilers get twice the heat out of a ton of coal that others get. It is largely a matter of harnessing the fire and getting the most out of it while it is still hot.

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JULY, 1910
Vol. VII, No. 7

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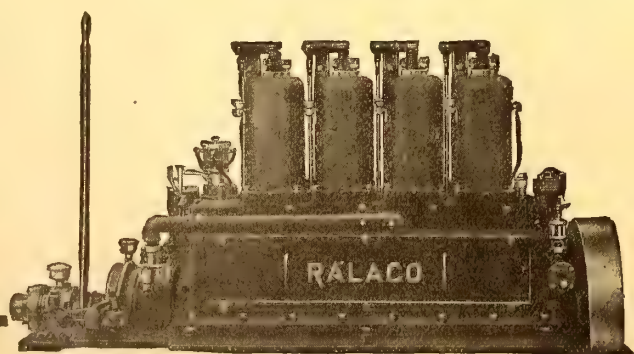
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Embracing upward of twenty-five selected designs of cottages originally costing from \$1,000 to \$3,000, accompanied with elevations, floor plans and details of construction, all drawn to scale, together with brief descriptions and, in many instances, full specifications and detailed estimates of cost. Illustrated by 61 full-page plates of floor plans, elevations and details.

No. 3. Modern Dwellings with Constructive Details

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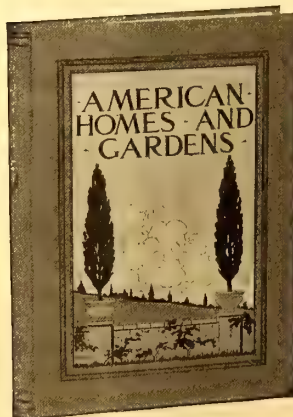
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BOUND VOLUMES OF AMERICAN HOMES AND GARDENS, 1909

494 Pages :: 1274 Illustrations :: Price \$5.00

American Homes and Gardens covers a very wide scope; it deals with house building from the design and construction of the modest house on small lots, to the building of mansions on large estates. All degrees of gardening from laying out of landscape to the planting of a window-box are dealt with. Practical questions of water supply, of sanitation, or the arrangement of the kitchen receive equal treatment, with draping of windows or the arrangement of old china.

American Homes and Gardens is beautifully printed. The year's volume contains more than 1,200 engravings, which are as full of detail and finish as actual photographs. They depict some of the old and historic mansions of America, and the most beautiful gardens or of natural scenery. The following list of a few of the practical articles which appear in *American Homes and Gardens* during 1909 will show the wide choice of subjects:



Notable American Homes (7 descriptive articles). Homes of American Artists (5 descriptive papers). What Really is Colonial Architecture. The Beauty and Economy of Stucco. Flower Box Beauty. Window-Curtaining for the Bedroom. Birds in the Country Home. The Bungalow and its Furnishing. Children's Playhouses. Concrete Ornaments for the Garden. Concrete in the Building of the Small Country House. Decorative Features in the Small Home. A French Model Dairy. Evolution of the Small House Plan. Furnishing the Nursery. Problem in House Furnishing. Garden Work About the Home. Garden Notes. The Farming Experiment of a Woman. Model Motor Houses. Plumbing for a Small Country House. Wayside Inn. What Can be Done with a Hand Loom. The Craft of Hammering and Piercing Metal. Practical Suggestions for Domestic Ventilation. Revival of an Old Handicraft. Handmade Rugs. New Developments in Stenciling. Colored Windows in the House. Wild Mushrooms. Wall Gardens.

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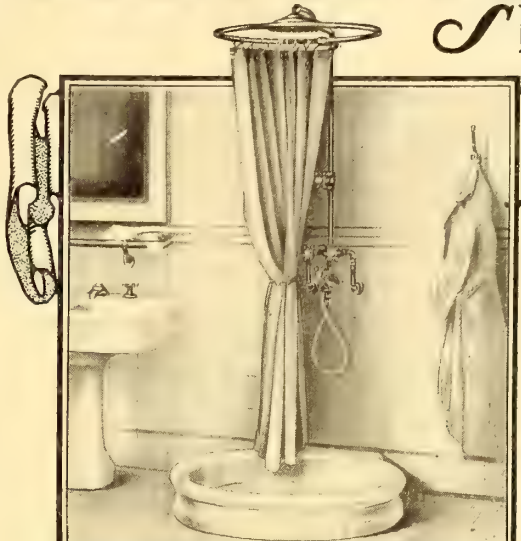
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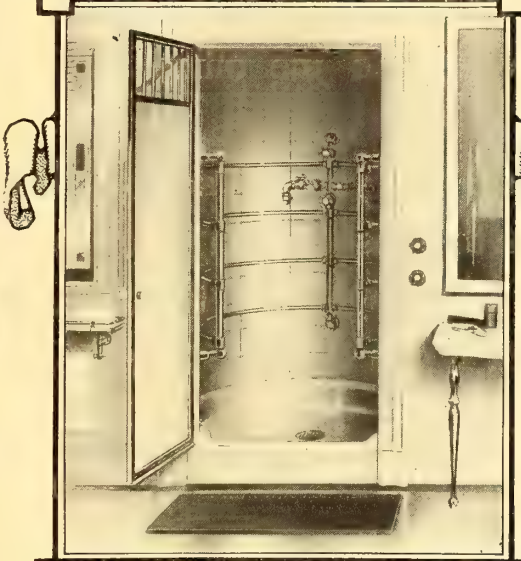
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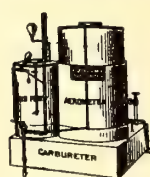
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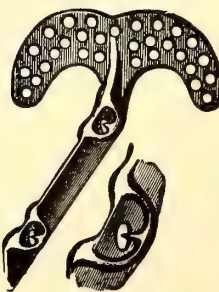


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GLASS ESPALIER WALLS

WHEN vines and trees are trained in espaliers on the south side of a wall, the north face of the wall is usually wasted, although it can be used for the cultivation of varieties of apples, pears, and cherries which are hardy and not subject to rot. If a transparent wall could be used, plants growing on both sides of it would receive the benefit of the sun's rays. Some experiments have been made with glass walls. Count de Choiseul recently published the results of such an experiment, with photographs showing heavily fruited pear trees on both sides of the transparent wall. The wall, which is about 60 feet long and 6½ feet high, was erected in 1901. Each side of it was planted with 15 pear trees of the variety *Doyenne d'hiver* (Winter Doyen), giving a wall area of 232 square feet to each tree. In 1907 the trees on the south side bore 134 pears weighing 91 pounds, and the trees on the north side bore 109 pears, weighing 77 pounds. All the pears were of very fine appearance and without blemish, and the pears on the north side were smoother than the others.

In the nursery of Croux et Fils is a glass wall, which is surrounded by horizontal glass sashes and planted with the same varieties of peaches, apples, and pears on each side. These espaliers also began bearing in 1907, and both sides have produced equally fine fruit. The difference in temperature between the sides of the wall is not very great, as the southern face reflects less heat and is therefore cooler than that of a masonry wall, while the northern side is warmed by the rays which pass through the glass. A masonry wall possesses, theoretically, one advantage over a glass wall, as it absorbs during the day a greater quantity of heat, and consequently exerts a greater heating effect at night. Longer experience will be required to determine which material is the better on the whole. The cost of construction is practically the same for both.

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THE cultivation of limes in the West Indies is a rapidly developing industry, although it is at present somewhat small when compared with the sugar and cacao trades. The yield of the fruit per acre varies with the nature and quality of the soil, but on good ground two hundred bushels of limes are yielded, diminishing to as low as fifty barrels per acre upon poor soil. The average yield, however, is about one hundred and twenty barrels. From one barrel of limes, seven to eight gallons of juice are extracted. The latter is exported either raw or in a density of one gallon of concentrated to 12 gallons of raw juice. About 80 barrels of limes are required to yield 54 gallons of concentrated juice. One of the most important branches of the industry is the production of "essential oil of limes." This product is obtained from the rind of the fruit by the *ecuelle* process, before passing through the mills. The distilled oil, which is one of the forms in which this product is shipped, is recovered from the juice after milling by the usual distillation process. Only about 3 ounces of the rind oil is obtained per barrel of limes, while the yield of distilled oil is approximately two and a half gallons out of 54 gallons of concentrated juice.

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The Cost of Manufacturing Denaturated Alcohol in Germany and German Methods of Denaturization are discussed by Consul-General Frank H. Mason in *Scientific American Supplement* 1550.

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In *Scientific American Supplement* 1581 the Production of Industrial Alcohol and its Use in Explosive Motors are treated at length, valuable statistics being given of the cost of manufacturing alcohol from farm products and using it in engines.

French Methods of Denaturization constitute the subject of a good article published in *Scientific American Supplement* 1599.

How Industrial Alcohol is Made and Used is told very fully and clearly in No. 3, Vol. 95, of the *Scientific American*.

The most complete treatise on the Modern Manufacture of Alcohol, explaining thoroughly the chemical principles which underlie the process without too many wearisome technical phrases, and describing and illustrating all the apparatus required in an alcohol plant is published in *Scientific American Supplements* 1603, 1604 and 1605. The article is by L. Baudry de Saunier, the well-known French authority.

In *Supplements* 1607, 1608, 1609 we publish a digest of the rules and regulations under which the U. S. Internal Revenue will permit the manufacture and denaturation of tax free alcohol.

A comparison of the Use of Alcohol and Gasoline in Farm Engines is given in *Scientific American Supplements* 1634 and 1635 by Prof. Charles E. Lucke and S. M. Woodward.

The Manufacture, Denaturing and the Technical and Chemical Utilization of Alcohol is ably discussed in the *Scientific American Supplements* 1636 and 1637 by M. Klar and F. H. Meyer, both experts in the chemistry and distillation of alcohol. Illustrations of stills and plants accompany the text.

The Sources of Industrial Alcohol, that is the Farm Products from which alcohol is distilled, are enumerated by Dr. H. W. Wiley in *Scientific American Supplements* 1611 and 1612 and their relative alcohol content compared.

The Distillation and Rectification of Alcohol is the title of a splendid article by the late Max Maercker (the greatest authority on alcohol) published in *Scientific American Supplements* 1627 and 1628. Diagrams of the various types of stills in common use are used as illustrations.

In *Scientific American Supplement* 1613 the Uses of Industrial Alcohol in the Arts and in the Home are discussed.

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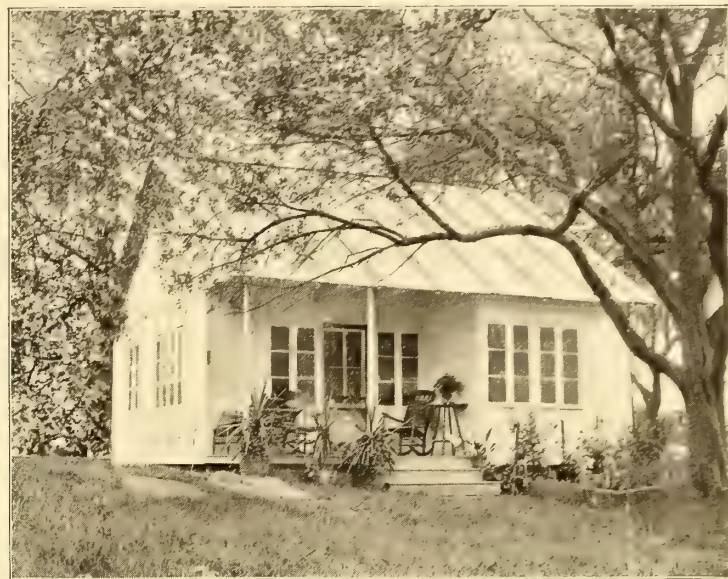
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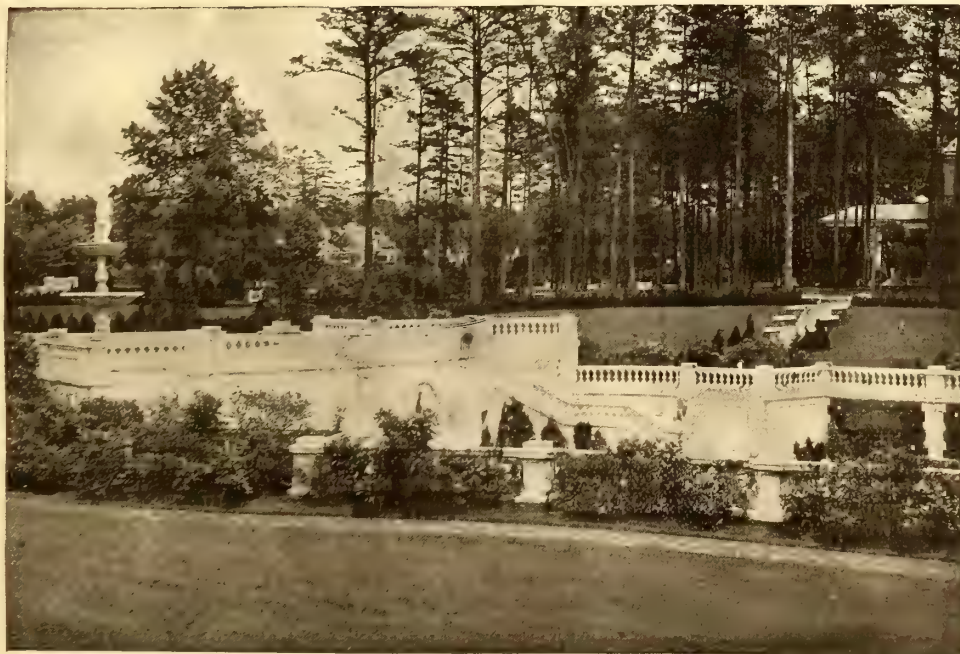
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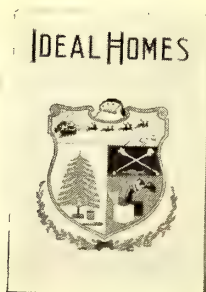
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Chapter I., Initiation; Chapter II., Building a Dam; Chapter III., The Skiff; Chapter IV., The Lake House; Chapter V., A Midnight Surprise; Chapter VI., The Modern Order of Ancient Engineers; Chapter VII., A "Pedal Paddle-Boat"; Chapter VIII., Surveying; Chapter IX., Sounding the Lake; Chapter X., Signaling Systems; Chapter XI., The Howe Truss Bridge; Chapter XII., The Seismograph; Chapter XIII., The Canal Lock; Chapter XIV., Hunting with a Camera; Chapter XV., The Gliding Machine; Chapter XVI., Camping Ideas; Chapter XVII., The Haunted House; Chapter XVIII., Sun-Dials and Clepsydrias; Chapter XIX., The Fish-tail Boat; Chapter XX., Kite Photography; Chapter XXI., Water-Kites and Current Sailing; Chapter XXII., The Wooden Canoe; Chapter XXIII., The Bicycle Sled; Chapter XXIV., Magic; Chapter XXV., The Sailboat; Chapter XXVI., Water Sports, and Chapter XXVII., Geyser Fountain.

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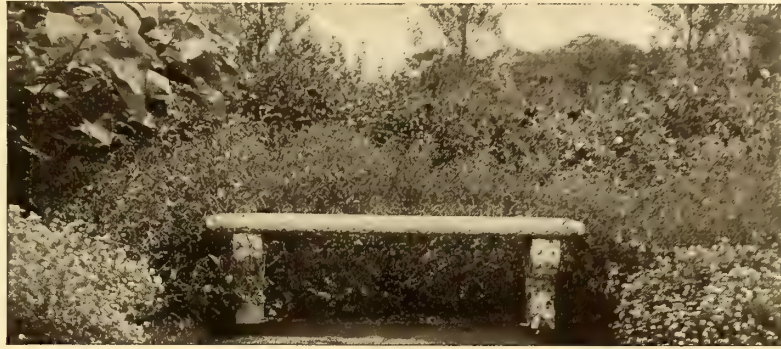
**A Collection of Ideas and Suggestions for the Practical
Man**

EVERY practical mechanic, whether amateur or professional, has been confronted many times with unexpected situations calling for the exercise of considerable ingenuity. The resourceful man who has met an issue of this sort successfully seldom, if ever, is adverse to making public his methods of procedure. After all, he has little to gain by keeping the matter to himself and, appreciating the advice of other practical men in the same line of work, he is only too glad to contribute his own suggestions to the general fund of information.

About a year ago it was decided to open a department in the *Scientific American* devoted to the interests of the handy man. There was an almost immediate response. Hundreds of valuable suggestions poured in from every part of this country and from abroad as well. Not only amateur mechanics, but professional men, as well, were eager to recount their experiences in emergencies and offer useful bits of information, ingenious ideas, wrinkles or "kinks" as they are called. Aside from these, many valuable contributions came from men in other walks of life—resourceful men, who showed their aptness at doing things about the house, in the garden, on the farm. The electrician and the man in the physics and chemical laboratory furnished another tributary to the flood of ideas. Automobiles, motor cycles, motor boats and the like frequently call for a display of ingenuity among a class of men who otherwise would never touch a tool. These also contributed a large share of suggestions that poured in upon us. It was apparent from the outset that the Handy Man's Workshop Department in the *Scientific American* would be utterly inadequate for so large a volume of material; but rather than reject any really useful ideas for lack of space, we have collected the worthier suggestions, which we present in the present volume. They have all been classified and arranged in nine chapters, under the following headings:

I., Fitting up a Workshop; II., Shop Kinks; III., The Soldering of Metals and the Preparation of Solders and Soldering Agents; IV., The Handy Man in the Factory; V., The Handy Man's Experimental Laboratory; VI., The Handy Man's Electrical Laboratory; VII., The Handy Man about the House; VIII., The Handy Sportsman; IX., Model Toy Flying Machines.

Garden Competition for 1910



The Garden in Your Town



THE publishers of American Homes and Gardens desire to announce a Garden Competition for 1910, and will offer \$100 for the four best planned, developed and successful suburban or village garden. The Garden Competition Editor of American Homes and Gardens wants to know if your garden is a success. If so, write and tell him about it. Tell him how you planned and how you planted your garden, and what success you had with it; tell him of the plants with which you had the best results and the ones which were failures; how you arranged for a succession of bloom; how you made use of the natural limitations of the plot and what mistakes you made. We want you to help us so that we may help others to beautify their surroundings, for this is the object of this competition. You need not be a skilled writer to tell the story of your garden success. Tell it in your own way.

\$100.00 for Prizes

For the best garden received we will pay :

For the first	-	\$50.00	For the third	-	\$15.00
For the second		\$25.00	For the fourth		\$10.00

Conditions

Competitors for the prizes must comply with the following conditions:

- 1 A general description of the garden, consisting of not more than fifteen hundred words, giving the size of the plot and the kind of plants used in planting, must be submitted. Give any details which you think will be of interest.
- 2 Drawings of the plot are to be made in black and white, drawn to the scale of eight feet to an inch, showing the position of the various plants and shrubs. Name each variety of plant on the plan by a number, giving a separate list with a corresponding number by which each plant may be identified.
- 3 Photographs of the garden must be submitted. It will be of interest to send as many photographs of the garden, taken from as many points of view and at different times in the summer, as illustrate the changes in the garden's appearance to the dominance of certain flowers. The photographs must be printed on printing-out paper and are to be not less than five by seven inches in size. A photograph of the site of the garden before it was developed would add interest to the series.
- 4 Descriptions, drawings and photographs are to be marked with a pseudonym which is to be enclosed in a sealed envelope containing the name and address of the competitor. All descriptions, plans and photographs are to be sent free of any name or address on them except the pseudonym. Express or postage charges must be fully prepaid.
- 5 Just as soon as the judges have rendered a decision upon the four best gardens submitted for this competition, they will notify the Editor who will open the envelopes bearing the pseudonym and containing the competitor's true name, and will at once notify the successful competitors that they have won the prizes.
- 6 The Garden Competition Editor reserves the right to publish in American Homes and Gardens all prize gardens and those gardens which in the opinion of the judges are worthy of honorable mention. The names of those whose gardens are reproduced will be published with the photographs.
- 7 Contributions are to be submitted to the Garden Competition Editor, American Homes and Gardens, Munn & Co., Publishers, 361 Broadway, New York.
- 8 The garden competition closes September 15, 1910. Contestants need not be subscribers to American Homes and Gardens, and no charge or consideration of any kind is required. No photographs, manuscript or plans will be returned.



The Magnificent Country Estate of the Late George Crocker is Now For Sale

“**DARLINGTON**” is situated in the charming hill country of Northern New Jersey, comprises about eleven hundred acres and offers a rare combination of mountain, wood and stream, with broad expanse of fertile field and residential park. On the north and east lies the well-known Havemeyer Estate; beyond it, the village of Suffern, and a little farther on, Tuxedo. Good roads radiate in all directions and the property is easily accessible by motor or by the Erie Main Line (Ramsey station, 3 miles; Suffern, 5 miles). While nature has been very lavish here, the late owner spared neither expense nor time in improving and beautifying the surroundings, crowning the whole by the erection of one of the most noteworthy private residences in America. The residence, modelled largely after a famous English manor house of the Elizabethan period, was completed in 1908. It stands on a lofty ridge overlooking a large part of the estate and commands an extended outlook, including the picturesque Ramapo valley and mountains.

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THE richly carved woodwork is chiefly of English oak, Circassian walnut and California redwood. Caen stone and marbles are also used in profusion, and decorations are the work of artists of high repute. The most impressive feature of the interior is the magnificent Great Hall, two stories in height with oak carved gallery and walls of Caen stone. The fittings of this great room are unusually striking and suitable, including a large built-in pipe organ, extraordinary rugs, hangings and furniture. Here and in other rooms are numberless art treasures in bronze, silver, porcelain, wood, ivory and needlework. There are paintings by great masters, tapestries and embroideries with histories and of rare value, and a remarkable collection of Chinese porcelains. Throughout the house are many pieces of antique furniture and costly reproductions.

¶ Darlington is for sale, as it stands, complete in every detail. The offering not only includes the lands, Mansion, farm buildings and many other structures, but practically the entire contents of all buildings, the large herd of Jersey cattle and other live stock, the vehicles and other equipment essential to a large country estate. The property, pending its sale, is maintained in the perfect condition in which it was the late owner's pleasure to keep it; every department in working order; the Mansion itself literally ready for immediate occupancy. *A booklet containing description by Barr Ferree and a number of exterior and interior views, will be mailed on request.*

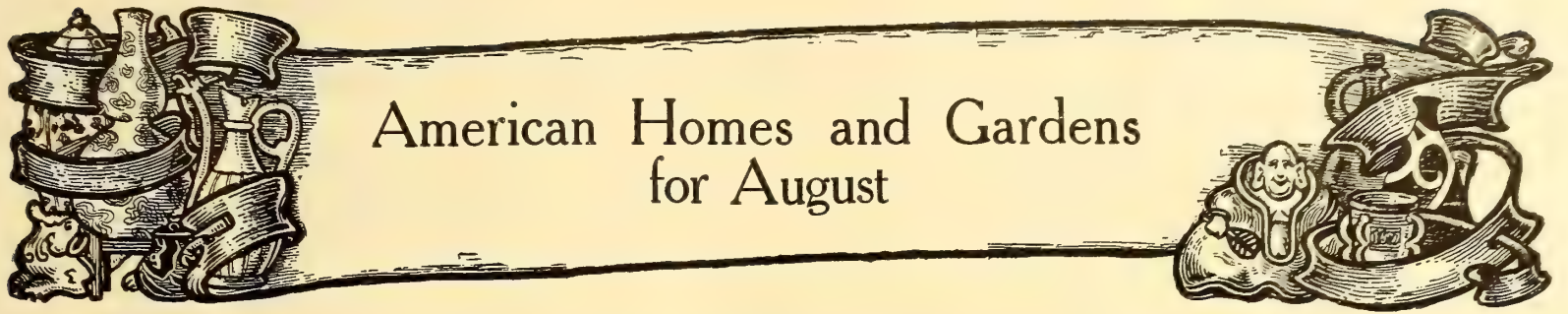
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THE beautiful terrace front with its grassy slopes, broad stone stairways, and mirror pool; the extensive vine covered pergolas and pavilions which are integral portions of the mansion; and the stately entrance front, about which are grouped a wealth of evergreens, box trees, Japanese maples, flowering plants and shrubs—cannot be adequately described or pictured. On the near-by wooded slopes and drives are many thousands of rhododendrons. Beyond the lawns are the extensive formal gardens with large fountain pool, then the greenhouses of extraordinary size and completeness, filled with choice flowers and rare fruiting vines and trees. An abundance of pure water from an artificial mountain lake (a part of the estate) has been piped to every desirable part of the grounds and into every building, with ample pressure and equipment for fire protection. The lake is a well stocked trout preserve.



A Notable Home

The residence of Mrs. John Nicholas Brown at Newport, Rhode Island, forms the opening article in this issue. It is a splendid house, is well illustrated by many fine engravings and is described by Barr Ferree in a pleasing and competent manner.

Decorations and Furnishings for the Home

Alice M. Kellogg presents her sixth paper on Decorations and Furnishings for the Home. Her article for this issue is devoted to the appropriate hanging of pictures, a subject to which very little attention is given. Miss Kellogg describes how to hang pictures properly, and illustrates her article by many engravings from which suggestions may be obtained for those interested in the artistic features of a home.

Crystal Brook

Crystal Brook, on the north shore of Long Island, represents a colony of summer homes built on the co-operative plan. Dr. Jerome Walker, one of the founders of the colony, tells in a very interesting way how the plan was developed and the success of it. The article is profusely illustrated by many fine engravings showing the beauties of the place and some of the homes built in the colony.

The Modern House

Paul Thurston has prepared an article on some of the modern houses which have been recently built throughout the country. The article is illustrated, showing houses designed in various styles of architecture, and constructed of various kinds of materials.

Methods for Beautifying the Gas Light

The handicraftsman may find of practical value a suggestion on one of the most important elements in home decorating. The average gas light is any thing but an ornament to a room, and Catherine A. Jensen shows in her article by the aid of illustrations, how this may be accomplished.

Making Plumes out of Crepe Paper

The pre-eminence of the feather for the trimming of the hat this year is unquestioned, and since the woman of fashion must complete her toilet, and crown her head with long and expensive plumes, a substitute for this costly plumage has been created. Ethel Jones tells in an interesting way how the imitation feather is made, and a series of engravings by which the article is illustrated shows how the work is conducted.

Some Notable Garages

The man who builds an expensive house naturally has to build a garage in keeping with it and its surroundings. The article prepared by Henry Hawley on this subject is well illustrated by many engravings which show some of the garages of this class.

The Heliotrope as a Bedding Plant

Heliotrope is a very attractive plant when it is properly placed and massed into one bed by itself. Ida D. Bennett presents an illustrated article, showing how this may be done.

Flowers as Desert

An illustrated article by Monica Bastin informs one how flowers may be candied and used for dessert. The engravings give a very clear idea as to how the flowers are handled and the text tells more of the details of their preparation.

A Substitute for Potatoes

At the present time when the cost of living is on the steady increase, any substitute that will lessen the high cost of living will be welcome. W. A. DuPuy has prepared an article on a substitute for potatoes which ought to appeal to any one interested in the economics of food supplies.

Vegetable Fountains

An interesting story by W. R. Gerard on the vegetable fountain is presented in this issue. The article deals with the various kinds of plants found in tropical countries that may be tapped so that a supply of water may be obtained from them whenever required. Huntsmen, foresters and others find this method very advantageous.

Furniture for the Home

Many people have difficulty in finding out what kind of furniture is appropriate for the lawn or the garden, and also the kind of furniture that will be lasting. Esther Singleton has prepared an excellent article on this subject, pointing out all the necessary details for the furnishing of the garden or the home grounds. The article is profusely illustrated, showing the kind of furniture to use for such a purpose.

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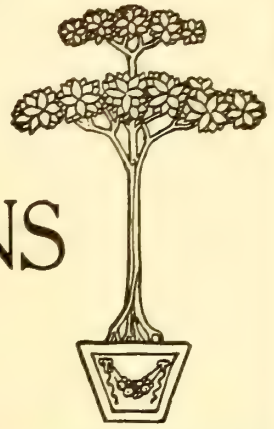
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CONTENTS FOR JULY, 1910

	PAGE
COVER DESIGN	By <i>M. R. Rahming</i>
STATUARY IN THE CENTER OF A POOL SURROUNDED BY A GROUP OF SPURTING FOUNTAINS	<i>Frontispiece</i>
THE GARDEN FOUNTAIN	By <i>Ralph de Martin</i> 255
FURNITURE FOR THE HOME—Porch Furniture for the Home....	By <i>Esther Singleton</i> 259
A HOUSE BUILT FOR MR. J. W. BUHLERT, at Wenham Mass.....	By <i>Mary H. Northend</i> 262
THE HANDICRAFTSMAN—An Amateur's Birdhouse.....	By <i>Sally Field Stevens</i> 264
THE ART OF FIRELESS COOKING.....	By <i>Monica Bastin</i> 265
WHAT THE MOTOR VEHICLE IS DOING FOR THE FARMER.....	By <i>Walter Langford</i> 267
AMONG THE RHODODENDRONS AND THE FERNS	270
YAMA-NO-UCHI AND ITS TROUT.....	By <i>Carlyle Ellis</i> 271
THE FINEST COLLECTION OF ANTIQUE WATCHES IN THE WORLD....	By <i>Charles A. Brassler</i> 275
SOME HOUSES AT MEADOWDALE, Bronxville, New York.....	By <i>Paul Thurston</i> 278
DECORATIONS AND FURNISHINGS FOR THE HOME—V. A Talk on Flower Holders,	By <i>Alice M. Kellogg</i> 282
"FOURACRE," THE SUMMER HOME OF THE LATE A. J. CASSATT, At Bar Harbor, Maine,	By <i>Barr Ferree</i> 284
GARDEN NOTES	By <i>Charles Downing Lay</i> 289
TIMING THE RAPIDITY OF THE LEADING TRAVELING BEAN SHOOT....	By <i>S. Leonard Bastin</i> 290
ORNAMENTAL BEDDING PLANTS FOR HEDGES.....	By <i>Ida D. Bennett</i> 291
Garden Competition for 1910	American Homes and Gardens for August
New Books	Correspondence
Canning and Preserving Fruits; Hints for the Housewife.	

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Statuary in the center of a pool surrounded by a group of spurting fountains

AMERICAN HOMES AND GARDENS



Volume VII

July 1910

Number 7

The Garden Fountain

By Ralph de Martin



THE fountain is successful in the garden only when it forms a definite part in the garden scheme, and it may play the part whether it be humble or majestic, be prominent or subordinate. The old French garden architects were thoroughly alive to its importance, as witness their achievements in the grand fountains of Versailles and other great French gardens. The Italians understood it, too, and many other old designers in other countries, and not a few great gardens are to-day better remembered for the fountains that play in them than for any other reason.

The European use of fountains; meaning by that phrase

the older use of colossal fountains as arranged by European designers, has no counterpart in America. The American garden and the American fountain are conceived on a much smaller scale than the great works produced in Europe to the end of the eighteenth century. Hence there can be no comparison between the two, and in viewing a collection of American fountains, such as is shown in the accompanying engravings, it is well to look at them as what they are, interesting examples of garden furniture, or rather garden decoration.

In this aspect the fountain has a real value in the well designed garden, provided, of course, a place is made for it and it is suitable for that place. How beautifully this



Fountain and pool of a formal garden



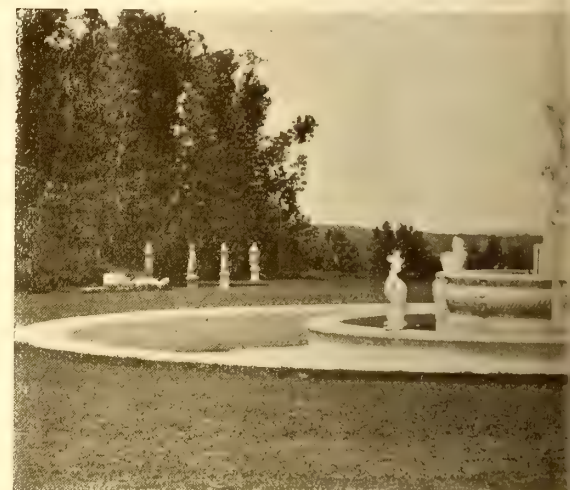
Pool and fountain shadowed by trees



Children at play



A fountain on a terrace



A monumental fountain



The surprise within the pergola



A fountain in the garden



A vase fountain



The simple water jet is always beautiful



stately environment



An old Italian fountain in an American garden



woods



A double fountain in a pool of water lilies



Pool and fountain shadowed by trees



Children at play



A vase fountain



The simple water jet is always beautiful



A fountain on a terrace



A monumental fountain in a stately environment



An old Italian fountain in an American garden



The surprise within the pergola



A fountain in the pine woods



A double fountain in a pool of water lilies

may be done, and how successfully, may be seen illustrated in these pictures, where one has but to try to substitute one fountain for another to note how unsatisfactory such changes would be.

The fountain is introduced into the grounds scheme for the purpose of creating a garden center or of serving as an important garden decoration. The word important in this place may need some explanation. A garden ornament is important when it performs some service of value. It need not be large or imposing; it need not be grand or costly; the value of its importance is determined solely by the significance of what it does. Hence a very small, and in itself inconspicuous, object may be highly important in the garden if it is employed in the right way and if it does a right thing.



Pool and fountain on a terrace

Hence, also, a very costly and even beautiful object may be highly objectionable if it has an intrusive result or seems, in any way, out of place.

And so, just as one will grow a certain flower on a certain shrub because of the result it will produce and for the beauty it gives, so one will place a fountain where it will serve some true decorative purpose, and be itself of real decorative value. Otherwise it has no visible utility and had better be dispensed with.

From the standpoint of design there is practically no limit to the form of the fountain. It may be a mere jet of water shot upward into the air in a simple straight line. This is always an effective use of water, and some delightful fountains are exactly this and no more. This is the simplest of all fountains, and from this rudimentary form the design may run up through an infinity of complexities to a colossal group of statuary which may be the crowning feature, or an elaborate structure that may or may not be emphasized by standing statues on the adjoining lawns.

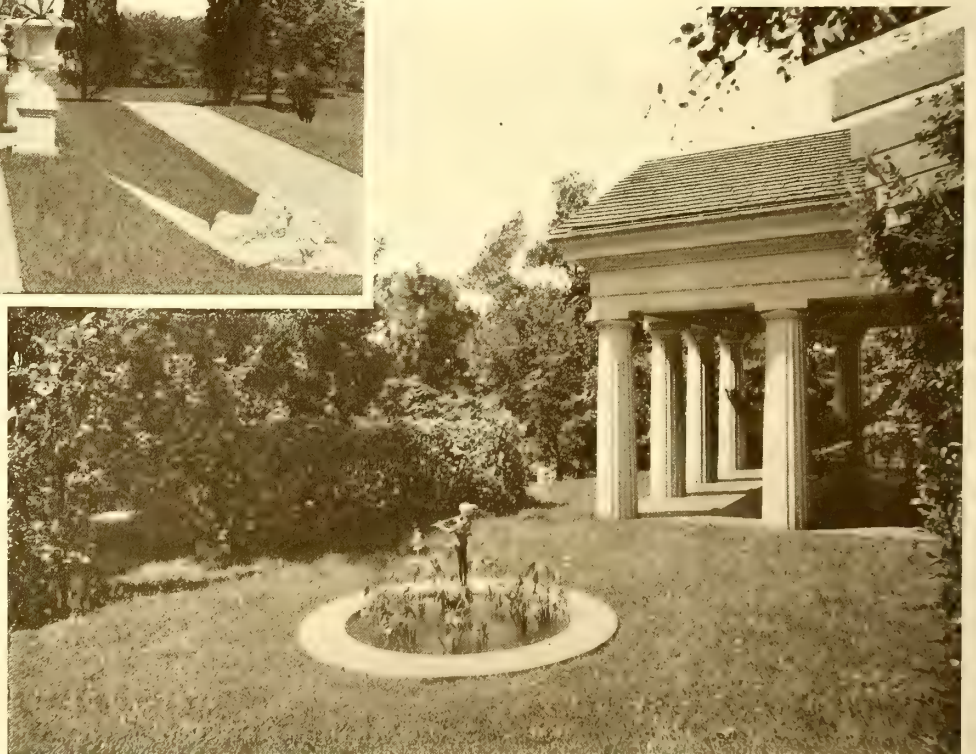
The determining question, in most cases, is fixed by matters of taste quite as much as by those of cost. A large place, on which there are ample lawns and which may be kept up in a large way, implies somewhat costly fountains and a considerable display. Certainly a large fountain is completely out of place in small surroundings, and in a gen-

eral way a large fountain requires a great deal of space in order to be advantageously used. That is to say, it needs this space in order to be seen and in order to seem suited to its environment.

Obviously, with smaller fountains, the question of space becomes comparatively unimportant. A small fountain may not take up much room, may not, indeed, be larger than an ordinary garden vase. But it is actually much more important than a vase. It must be permanently placed, and the spray of water ejected by it is something quite beyond the ordinary in the garden features. Moreover, it is very apt to be but the single thing of its kind in the whole garden. Unimportant as these circumstances may seem, the sum total of their effect is quite considerable. At all events

they take an important part in emphasizing the importance of the fountain and in giving it individuality. They certainly show that any garden feature with such qualities calls for distinctive and individual treatment.

It is in its individual form that the fountain has its most notable character. The fountain that is especially designed and which has no mate, is the only fountain that should be considered unless it be the simple jet, which so far as decorative fixture is concerned, is a simple display of water only without the aid of ornamental



A miniature fountain in a garden court

structure. But the individual fountain on which some sculptor has lavished the skill of his chisel, may very well be a rare and precious work of art, the mere possession of which may be a true joy, and the placing of which must be accomplished with every possible care.

The accompanying illustrations show a wide variety of fountains, fountains very varied in themselves, and used in very varying ways. They show many other points of interest than the fountains, but nothing of more value than the highly decorative value of these garden ornaments. These charming lawns would be just as green and delightful without them; these shining surfaces of water would be just as cool and agreeable to look at, but neither lawn nor pool would have the interest they possess without these fountains.



No. 8. A veranda of the simplest type

Furniture for the Home

By Esther Singleton

Porch Furniture for the Home



THE veranda is practically a summer room where one is able to enjoy all the pleasure of sitting out of doors without any of the discomforts; for it affords protection from the glare of the hot sunlight and the dreaded sudden shower. Moreover, all the indoor luxuries are close at hand, and on the veranda one's ordinary occupations can be pursued as if within doors. Of late years particularly it has become a feature in the country or suburban home. Though the materials for furnishing the veranda are somewhat limited in kind, their variety is endless. Sheltered from the sun and the rain by glass screens, reed screens, or awnings, bright with gay rugs and cushions, comfortable with chairs, sofas, benches, settees and swings, and attractive with blooming flowers and daintily set tea-tables and tables on which books, vases and bowls of flowers or articles for the smoker's use are invitingly set, the veranda is an informal place where the family delights to gather and guests like to be received.

A few up-to-date examples are shown here as suggestions for those who contemplate furnishing, or re-furnishing, this department of the house.

No. 1 is a somewhat stately out-of-door room completely hung with reed screens. There is no attempt at furnishing. No. 2 is of beautiful proportions, and can be protected from the rain and cold by

glass, and rendered shady by reed screens. It looks upon an attractive rock garden, and if the furniture were more luxurious and the rugs more plentiful, it would be an ideal veranda.

No. 3 is a cosy and comfortable room, with a set of cushioned furniture, tables for tea and work, and lamps and lanterns. Being enclosed in glass, it is a delightful sun-room in the winter, and when this is removed it becomes a charming nook for summer days and evenings.

No. 4 is particularly attractive. It is semi-circular, and a lovely landscape is framed by the columns. Such a veranda could be furnished for about \$100. For example: Two arm-chairs, \$12.50 each; a rocking-chair, \$12.50; two rush-bottomed chairs, \$5.00 each; "Andrew Jackson" chair, \$3.25; rustic center table, \$6.50; swinging bench, \$15.00; rug, \$21.00; and two hanging baskets, \$4.00.

No. 5 is of good proportions, and the beautiful effect of the foliage between and around the columns, softening the severe lines with its garlands of greenery, proclaims the artist's taste. No. 6 is very simple, and its hammock and steamer chair invite repose. The chief attraction of No. 7 is its swing.

In many homes a back veranda, conveniently situated near the kitchen or dining-room, is enclosed with wire and used as a breakfast and supper-room. As much thought is given to



No. 6. A simple corner inviting repose

it as to any other room in the house. In some cases the veranda is floored with brick, and in others it is tiled, though boards stained or painted to suit the taste of the owners are the most general. The ceiling is usually a neat piece of carpentry, and supports one or two electric lights. Reed screens, or awnings, are a necessity, and no one need fear having too many cushions for the rugs and soft seats. A goodly supply of floor cushions is very convenient, and little Indian stools

that cost about \$1.50 or \$2.00 each are also very useful. A very light table, easy to move about, is a necessity. The steamer chair is preferred by many people to a couch or hammock. Willow, wicker and rattan furniture can be painted any color to suit the house, and much taste may be expressed in the selection of the material for the cushions. Rustic furniture with woven seats has also come into vogue recently, and sets including a sofa or settee chair and rocking-chair cost from \$12.50 to \$21.50, according to the style and finish. A Morris chair of this species costs \$12.50; small rustic tables, from \$3.00 to \$6.50; and a good-sized breakfast table, \$14.00. A hundred dollars could be profitably expended as follows: Curved back settee, \$9.00; two chairs, \$6.00; "Andrew Jackson" chair, \$3.25; rocking-chair, \$6.50; table, \$6.50; two Indian seats, \$4.00; two swinging-baskets, \$4.00; two rugs, \$16.50; two reed-screens, \$18.50; cushions, \$25.00 (\$99.25). Another suggestion for furnishing a veranda at small expense is the following:

Four reed-screens, 12 feet each (with a ten-foot drop), \$9.75 each—\$39.00; one arm-chair somewhat similar to the one in No. 5, \$9.00; one rocking chair similar to the one in No. 6, \$8.50; table similar to the one in No. 5,



No. 9—A veranda with a lattice screen

Rustic flower-stands, pots or jars of flowers, long boxes on the balustrade (if the veranda is supplied with one), swinging baskets and trellis-work for climbing roses and honeysuckle, are, of course, extra touches that depend on the taste and means of the inmates—and these often count for more than the furniture itself.

No. 8 is a veranda of the simplest type. It would be greatly improved by more climbing roses, and pots or boxes of flowers in the window-sills and on the balustrade and steps. It has all the possibilities of becoming an attractive retreat. A tea table, a few bright cushions, more rugs and plenty of blooming flowers would work wonders. Twenty dollars spent here would accomplish a miracle.

No. 9 depends almost exclusively on the lattice screen for its artistic effect—and the effect is very pleasing to the eye. The lines are harmonious and restful. It reminds us somehow of rooms in paintings by the Italian masters. Formal plants in pots, or vases, would contribute appropriate ornaments to this pleasing nook. Furniture of a more severe character, adorned with comfortable cushions, rugs and awnings, would bring out the exceptionally fine qualities of this sitting-room.

In furnishing a veranda, one need never be afraid of

\$6.50; one willow arm-chair, \$7.50; one willow sofa, \$14.00; Belgian rug similar to the one in No. 2, \$27.50; hair cushions covered with Scotch madras for four chairs and sofa, \$28.00. Add to this a hammock of the "Cape Ann" variety, made of sail-cloth, and cushions of Turkey-red or Scotch madras, to match the furniture, \$13.75. Total, \$153.75. If preferred, the Crex or grass rugs, in blue, red, or green, 9x12 in size, \$8.25 each, could be selected.



No. 2—A veranda of ideal proportions, looking on a rock garden



No. 1—A stately out-of-door room hung with reed screens



No. 5—A well proportioned and home-like veranda



No. 7—A veranda to delight the children

too much color or too many rugs and cushions; and while it is well to have everything at hand for comfort, a great collection of articles is likely to prove a nuisance. Strong, solid articles, such as will not get knocked over in the uncertain light of fading day, are also desirable.

Many excellent rugs can be purchased for small prices. Serviceable bungalow rugs of various sizes and colors; prairie-grass rugs of many colors and patterns, and rag rugs in innumerable designs can all be had from \$4 to \$50 and upwards, according to the size and design. Cocoa-fibre rugs are also popular, and cost from \$4 upward.

Of all screens, the prettiest by far is the one composed of natural leaves and blooms, that lets in the air and light while it softens the fury and glare of the sun. A coarse wire netting stretched from floor to roof and pillar to pillar will soon enable any creeper you select to frame in your cosy retreat and make it a place of beauty. What could be more delightful than a bower of the ordinary honeysuckle with its white and buff bells, scattering scent in the air? The Coral honeysuckle is not easily surpassed, with its profuse and brilliant scarlet flowers, and the Chinese sweet-scented honeysuckle is also a rapid grower. The climbing roses are, of course, legion; and all the clematis family are worth consideration. Of all, perhaps, the loveliest is the *Clematis azurea grandiflora*, a very

hardy plant, a fine bloomer, with flowers sometimes several inches in diameter and of a lovely blue. The pink Bell Clematis is also a native plant and a good grower. There are some species of the Passion vine that will flourish in our climate, and which, though dying down in the winter, put forth hardy shoots in the spring. The Wistaria should also be remembered, and the old-fashioned Dutchman's pipe makes a good arbor-twiner. The ordinary grape vine also forms beautiful screen.

Nothing forms more beautiful festoons than the Crimson Rambler, and the Yellow Rambler is also a satisfactory bloomer and contributes exquisite color. A handsome addition to the veranda is the Trumpet Flower, a native of the Southern States. There are many varieties, some of which are very decorative. The *Bignonia capreolata*, with its large reddish-yellow, trumpet-shaped flowers, is showy and very popular. It would adorn posts and corners of veranda and roof with great effect.

Even the common morning-glory and the balloon-pea on a back veranda add cheer and beauty. The Irish Ivy is very valuable for covering an unsightly corner, and grows in shady places where few other plants will thrive. Window-baskets, pots, jars, vases, and boxes, of course, permit of an endless choice of beautiful flowers, ferns and trailing plants.



No. 3—A cozy and comfortable nook for both summer and winter



No. 4—An attractive veranda which could be furnished for \$100



A house of pleasing design constructed of shingle and stucco

A House Built for Mr. J. W. Buhlert, at Wenham, Mass.

By Mary H. Northend



THE interesting house illustrated herewith is the all-the-year-round residence of Mr. J. W. Buhlert, of Wenham, Massachusetts. It was designed by Messrs. Magee & Rowe, architects of Boston. It is ensconced in a setting of grass and against a background of savin-covered hills, and the location is sufficiently remote from the main

highway to insure privacy and quiet. The exterior is a pleasing combination of weather-stained shingles, soft gray stucco and a dark brown painted trim. An interesting feature is the large veranda enclosed with glass and connecting with the long, low extension.

The roof is pitched rather deep, is finished with shingles, and its low overhang supported by broad brackets painted white, is edged about the extension with a



Stucco columns support the roof of the porch



The fireplace is a feature of the living-room

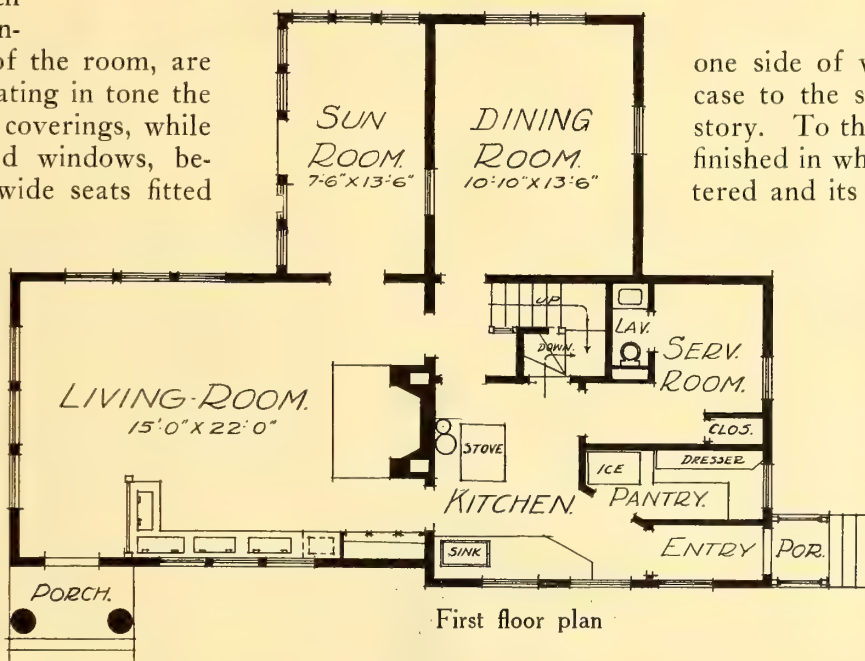
wide white molding.

The inviting entrance porch, with its odd curved roof supported by plaster columns, opens without any preliminary of hall or vestibule to the large living-room, finished in keeping with the bungalow idea, and occupying the entire extension part of the building. It is open to the roof, showing the rafters exposed to view, and which are stained a soft golden brown. Its walls are sheathed with matched cypress, stained like the ceiling, while the floor, of maple, is stained and polished and partly covered with rugs of warm, rich tints. Long French windows, built at each side of the room, are hung with portieres, repeating in tone the color scheme of the floor coverings, while the broad, partly latticed windows, beneath which extend low wide seats fitted with covers which lift up disclosing convenient storage space, are shaded by simple muslin draperies.

The feature of the living-room is the great open fireplace at one end of the room, and built of red brick laid in white mortar, which is exposed and extends to the roof. A narrow mantel of cypress is placed on



A plate rack is a feature of the dining-room



one side of which ascends a broad staircase to the sleeping rooms in the second story. To the left opens the dining-room, finished in white wood. Its ceiling is plastered and its floor of hard pine is stained and polished. The walls are partly covered with a dado of rose design edged with a broad white wood finish, above which rises a plain field of plaster left untinted.

The kitchen is a long narrow room with buff tinted walls and floor of spruce. It is equipped with every modern convenience, and numerous space-saving devices.



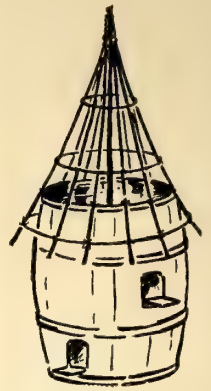
The sun room is an attractive acquisition to the house



THE HANDICRAFTSMAN



Conducted by A. Russell Bond



An Amateur's Birdhouse

By Sally Field Stevens

EVER since seeing the thatched bird-houses in England, we have longed for one of our own. There is a picturesque quality in a thatched bird-house that no other kind possesses. Last summer, this idea was still more impressed on our minds, when seeing a print of a quaint old Scottish garden. In this garden was a bird-house of very simple proportions—in fact, the body of the house was very much like a nail-keg that we had been cherishing—its staunchness having appealed to us as too good to be wasted. A timely article on thatching which had recently appeared in one of the magazines made it possible for us to attempt it.

We had, the previous summer, cut off, about six feet from the ground, a tree that was dying at the edge of the wood.

On the stump, we had placed a bird-bath—but the birds did not use it.

It was too high or too exposed. Hereafter they shall have their bath under the rugosa-hedge.

This left the stump very much in need of decoration—hence the necessity for the bird-house.

It was in August that these ideas came to us when we had nothing to do but to admire the phlox and pick tea-roses which insist on blooming the whole summer through. Therefore, we could begin at once. Our bungalow is in a summer colony, far from town or farms and we had great difficulty in obtaining rye straw. This is a requisite for good thatching—oat straw being too brittle and uneven. A chance encounter with a young farmer who purveys ducks and chickens at cottage back doors, solved our problem. He sent down a fine bundle of it by rail the next morning.

In the meantime, we found plenty to do in turning the nail-keg into a bird-house. We first cut two doorways with a fish knife, our most formidable tool; one was cut near

the floor, the other higher up. Good-sized steps were placed and well braced in front of each. This is a most important point as the birds never fly directly into a doorway. They must alight and hop down to the nest.

Our next step was to erect a center pole. This was made from a well-seasoned and sturdy oak sapling with the bark peeled off. It was secured to the bottom by driving a large nail through the keg into the butt end of the pole. At this stage we gave the whole keg two coats of a warm-gray paint. This color harmonizes well with the thatch and the woody surroundings. We rested from our labors while it dried.

We had yet to settle the question of the framework for the thatch which had been a source of uncertainty from the beginning. We knew that we must have strong supports from the top of the center pole to the rim of the keg—forming a conical roof. We first tried some pieces of fine molding, but found that they were too clumsy for so small a roof. A chance suggestion proved to be the right thing. There are many oak and maple second-growths in the neighborhood and from these were cut strong yet supple wythes. These were bound to the top of the center pole with picture wire and radiated at equal intervals towards the rim of the keg. They were secured there by tacks and fine wire. We allowed them to extend a full four inches beyond the rim to form the overhang. In addition to these “rafters,” if we may call them



A little thatched bird-house appropriate to bungalow surroundings

such, we had to provide horizontal supports which were hoops of heavy copper wire lashed to the wythes with picture wire. The sketch at the right of the headpiece shows the keg with the bare frame in place. We were now ready to thatch. The house—it already had a cozy look—was taken to the shady porch and the real work began.

The way of thatching is this—small bundles of straw are tied to the hoops, first at the top, then at the bottom. Though fine copper wire is undoubtedly the best medium

for tying on full-sized roofs, we found raffia threaded in a bodkin quite the nicest thing! It harmonizes so well with the straw and is strong enough for our small bundles which were about the size of one's wrist. After tying, each bundle should be trimmed. The raffia is not cut at each tying, but after passing in front of the bundles it is looped over the hoops and pulled tight and the next bundle is placed. Two tiers of thatch seemed all that were necessary. (Note the sketch at the left of the headpiece, which shows the roof partly thatched.) At the top a decorative finish was given by a stout winding of raffia fastening the top tier to the

center pole.

The house being finished, a square board with moldings was nailed to the tree and painted. The house was then secured to this with long screws which passed through both the board and the keg, care being taken that the doorways should face south and west in order to keep out the rain and cold winds.

This made all fast and ready to withstand the winter winds. It has weathered the winter and proved absolutely rain-proof. As a unique bit of architecture, it adds an interesting touch to our Dingle.

The Art of Fireless Cooking

By Monica Bastin



WHEN it is first suggested to accomplish any sort of cooking with a wooden box and some hay, it will doubtless, and not without reason seem impossible, even by means of magic. Therefore it is not strange that on introduction to the subject, the wonderful fireless cookery is often shelved as something too good to be true. With further knowledge, however, it will be found not only practical, but far more simple, both in theory and working than would appear to the casual observer.

If only from a hygienic point of view it is worth considering as a reducer of dirt and dust, while to a large extent it does away with those unpleasant cooking odors, which make it so desirable that the kitchen should be always shut off from the rest of the house. Thus its value to the housewife, once it has been established as a working institution will be easily realized. This is increased by the fact that once the meal is put in the cooker, it requires no further attention until the time comes for taking it out and serving it at the table. Doubtless it will readily occur to the reader that an article so useful in an ordinary house may prove invaluable in emergencies, or in cases which are out of the common run of everyday life. In such a way will the hay box recommend itself to summer campers, or for boating and caravan vacations.

The theory of the cooking is based on the same lines as that of keeping food hot by means of a vacuum, only in this case hay is used as the non-conductive medium to stop the radiation of heat. It will therefore be seen that it is necessary to bring the food to a certain height of temperature with fire heat, but once this is done the hay box will finish the cooking to perfection.

A few practical hints as to the best method of construction will doubtless be welcomed by those to whom the idea appeals and who think of starting a hay box cooker either for use permanently or during the summer months. The stout wooden box which is the basis and principal part of the cooker must be well made and put together, without cracks and with a closely fitting lid which fastens down securely. It is supremely important that everything be made to fit, thus minimizing the possible escape of heat in every way. A carpenter given the measurements by which to work would quickly make such a box at a very reasonable cost. A large sugar box would answer the purpose if all the cracks were stopped up, but as this may take time and trouble with only partial success, it will probably be worth while to have one made exactly to requirements. The size of the box must be judged according to the quantity of food

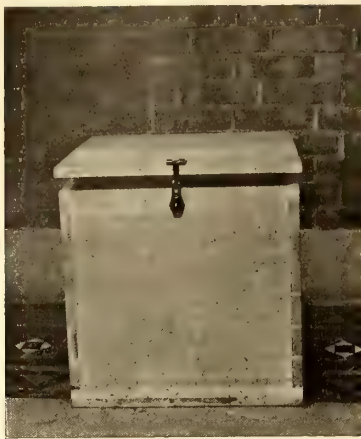
which it is supposed will as a rule be cooked in it. Also of course it depends on whether there is to be more than one compartment in the cooker, but for the first experiment a very usable one can be made on the lines described here. The box shown in the illustration is exactly one foot eight inches every way by interior measurement. This with a gallon cooking can, allows for an ample six inches of packing all round and a thick layer at the bottom. In order to make it as easy as possible of manipulation, the top covering of hay should be stuffed into a stout mattress cushion. It is important to have at hand plenty of hay when beginning to pack the box as one will probably use more than would be imagined at first. When the bottom of the box is covered the can should be stood in place in the exact center. The packing is then continued round it, up to the level of the top of the can. The cushion must be cut to the inside measurements of the box and should be from five to six inches deep. The cover may be of linen or muslin. It must be tightly stuffed, special care being taken in filling the sides and corners. When the cushion has been fitted in place and when it is seen that the cooker is properly constructed with no air spaces between its various parts, it will be ready for the trial of a cooking experiment. Inside the can, which is just an ordinary one with a lid and a handle, it will be found useful to have a smaller china or enamel pot also with a lid. This should be nearly as high as the can so that the latter can be almost filled with water without fear of its running over into the jar. It is necessary as much as possible to fill all the utensils used for the fireless cooker. Here again wasted space will result in failure. Large quantities of food which are to be cooked in liquid, can be put straight into the outer can, in which case, of course, the jar would be removed, but it will be useful for cooking smaller quantities or for articles of food which are to be steamed. The contents of the can must always be brought right to boiling point before putting it in the cooker and things of considerable substance such as joints of meat will require boiling for a little while so that the heat may penetrate right to the center.

Individual discretion must in each case determine the length of time likely to be needed for cooking over the fire. It may vary from a few minutes to half an hour according to the size and solidity of the articles of food.

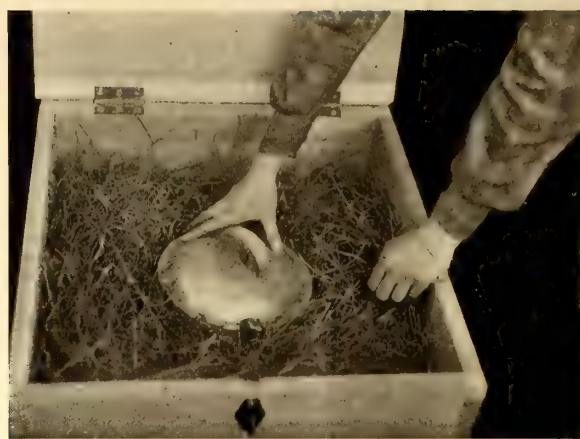
Fireless cookery, it will be easily realized, is a much slower process than that which is used in the ordinary way, but as the food requires no watching or attention and as it does not deteriorate even with over cooking, this is not a serious disadvantage. Of course it depends largely on the class of food as to how long it must remain in the box and it



Packing the box with hay



The box for the cooker



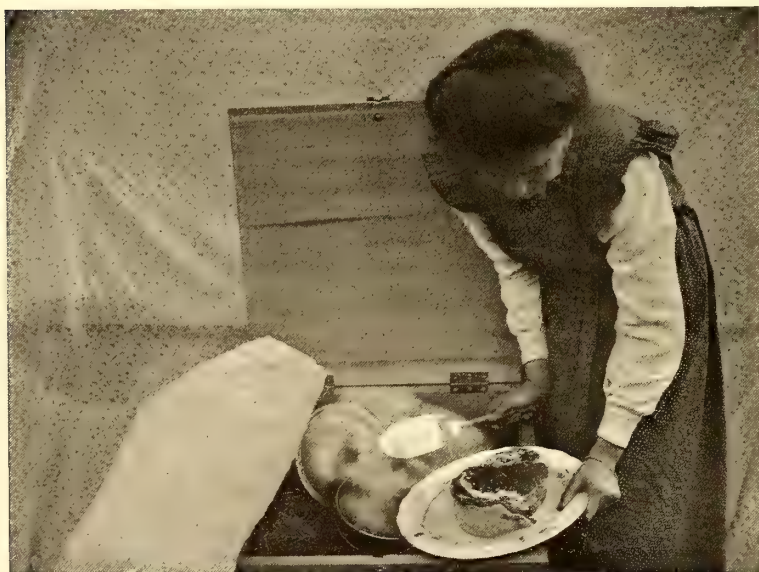
Fitting the can in place in the cooker

is impossible to give a definite code of rules by which to work. Sometimes double the length of time allowed for fire cooking will be sufficient. On the other hand, for a substance which is very close and fibrous, twelve hours would not be too long. Experience is therefore needed before an exact table of times can be reckoned, but practice with the cooker will soon make perfect in this respect. It is a good plan to keep for reference a list of the length of time given to each article.

With a little contrivance it is possible even in a box with only one compartment to cook two or three dishes at a time, though before a very elaborate menu can be attempted it will be necessary to have a cooker with two or more spaces in it. However, one article can be cooked in the can, another in the inner jar, and a third in a basin which will fit down into the top of the latter, so it will be seen that it is possible

to produce a very passible luncheon or breakfast with a single box only. Great speed is necessary in transferring the can boiling hot from the fire to the cooker. The food will not cook properly if there is any delay in this part of the proceeding. Also on no account must the box be opened till everything is done, or it will let in the cold air.

The cooker is so clean in its way of working, that should it be required in any part of the house other than the kitchen, it can be placed there without inconvenience. It is a good plan to provide the box with two strong handles, so that it may be easily carried. It may also be decorated outside or covered with muslin so that till it is opened it will look like an ornamental box. An old oak chest, turned into a hay box cooker would make a novel and exceedingly useful wedding present to a young couple about to start housekeeping in a small establishment of their own.

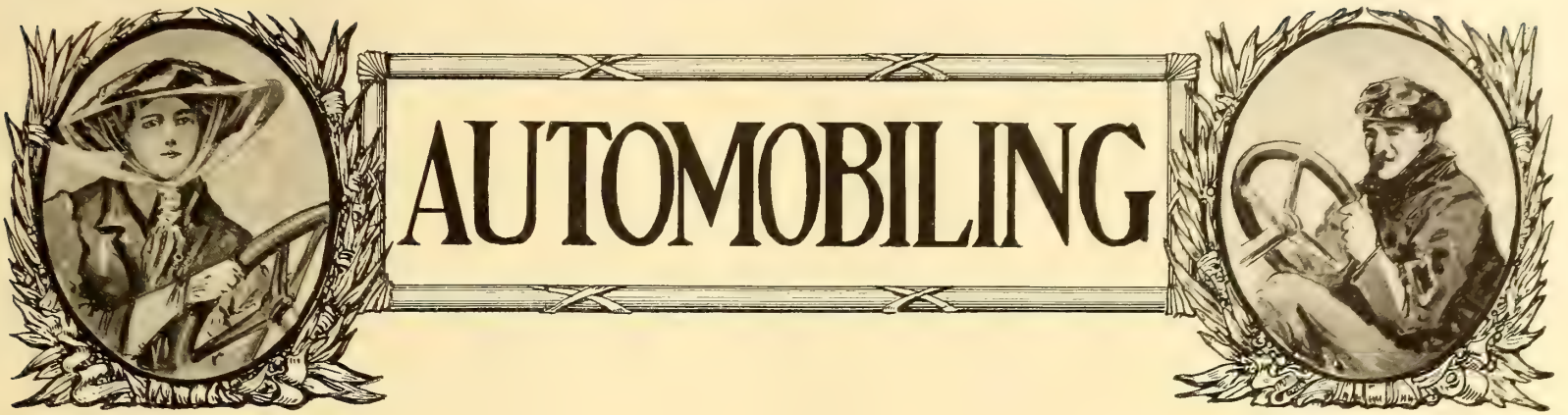


All kinds of joints can be cooked to perfection in the hay box



Food will be found scalding hot even after twelve hours in the cooker





What the Motor Vehicle Is Doing for the Farmer

By Walter Langford

LESS than five years ago farmers generally looked upon the automobile with bitterness, and condemned it as a "toy of the rich." To-day, there are farms comprising hundreds and even thousands of acres, on which nearly all of the heaviest work is done by motor vehicles. There is hardly any part of farm work that cannot be done more quickly and with greater satisfaction by the use of motor power—either applied to a self-moving machine or in the stationary form—than with horseflesh. Whether it is making a quick trip to town with a load of butter, eggs, fruit, or vegetables, to the creamery with the evening's cans of fresh milk, to church with the family on Sabbath morning, doing the spring and fall plowing, cultivating, reaping, threshing—the motor vehicle in its varied forms has become the latest ally of the progressive, prosperous farmer.

It has been a matter of general knowledge and common comment in automobile circles that extraordinary numbers of motor cars have been going into the remote sections of Kansas, Nebraska, Minnesota, the Dakotas, Colorado, and even Montana, Oklahoma, and Texas during the past season. The statement has been made by a man identified with the trade and presumed to be posted, that fully one-quarter of the purchases of motor cars west of the Mississippi during the season of 1909 were made by farmers; and this means a good many when the

combined output of the manufacturers of the country for the year aggregated in the neighborhood of 75,000 machines. Some of the little communities in the Middle West, with a population numbering only hundreds or at most a few thousand inhabitants, have begun to boast of possessing more motor cars in proportion to population than any other city or town in the country; and to prove it, they

congregate all the cars in the Main Street of the town and have a group photograph taken.

The farmer who has long distances to go for everything, from a keg of nails to a paper of tobacco, and who works early and late to make up time lost partly in going "to town," has not been slow to appreciate the luxury and time-saving ability of the motor car. He balances off the cost of a tenth or a twentieth of a gallon of gasoline per mile traveled against a third or half bushel of oats a day at 65 cents a bushel, whether the horse is working or is standing in the stall on a rainy or a winter day, and reckons the time saved to himself as mainly pure gain.

Scattered all the way from the Atlantic to the Pacific coasts there are small fruit and vegetable growers, dairy farmers and poultry raisers, who make a daily practice of carrying light loads of produce to market in the tonneau or on the rear deck of ordinary light touring cars. They can leave the horses to work in the field, and can make the trip in a third or quarter of the time formerly consumed, thereby gaining just that much additional time to be devoted to

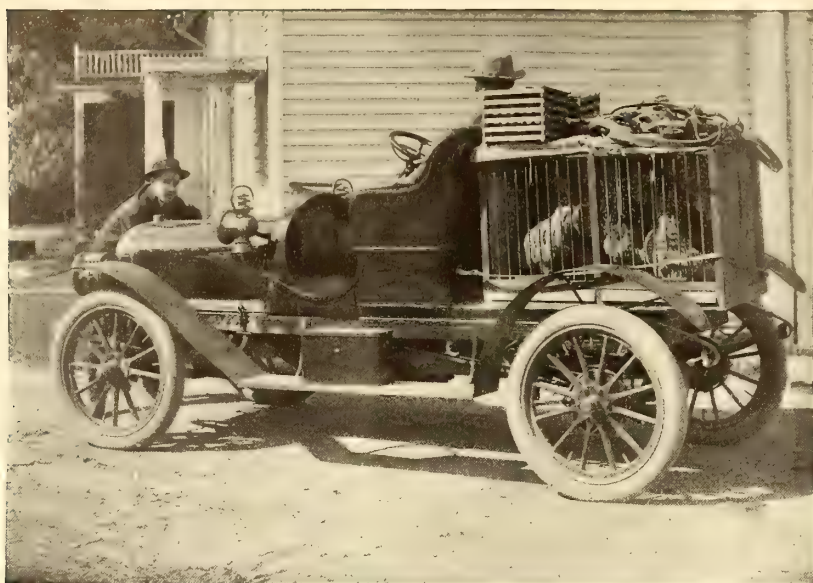
more work or to reading, visiting, attendance at concerts, lectures, etc.

The ordinary four or five-passenger touring car of moderate power and reasonable price is most extensively used by farmers. Some of the accompanying illustrations show how such a car is put to practical uses on the farm, with the rear seat removed. This is the general utility automobile of the agricultural



An automobile traction engine used for driving a threshing machine

sections, and is used for a great variety of purposes. With it the farmer drives out to his grain field to superintend the threshing, runs down to the pasture with a reel of wire to repair the fence, runs into town with the horses' collars and harness to have them mended, carries cans of milk to the creamery or crates of live poultry to the express office. Observing the growing demand by farmers for a car for



Carrying crated chickens and eggs to market

all-around work, a wide-awake automobile manufacturing company about two years ago began advertising in the farm papers a double-cylinder light touring car at a moderate price, and inside of a year between 500 and 600 cars had been sold in the rural districts. There are now probably between 1,500 and 2,000 of this company's machines owned by men who live on farms, practically all of whom use them as general utility machines. An easily removable tonneau, high clearance above the road, a thoroughly protected engine and transmission, reasonable price and low fuel consumption and maintenance cost have contributed toward making this model popular with the rural buyers. From the statements of hundreds of users, it is found that the average cost of upkeep is not more than two-thirds that of keeping a horse. The farmer of to-day is well informed regarding the mechanical features that adapt an automobile to his requirements, and is a careful buyer. He can safely carry 500 pounds on the rear of a 20-horsepower car, and can drive ten miles to town in from half to three-quarters of an hour with the load.

Largely as a result also of the farmers' demands there has been developed during the last three or four years a type of motor car called the high-wheeled buggy. There are upward of fifty companies in the country now actively engaged in building this style of motor car especially for use in country districts where the roads are rough, hilly, and, according to the season, deep with mud, sand, or snow. They are very low in price, simple in construction and operation, and answer the purposes of many rural dwellers very well. They use only about a gallon of gasoline to fifteen or twenty miles traveled, and a set of narrow solid tires, costing say \$25, will wear a year or more, with no expense for repair of punctures or blow-outs.

Within a year or two there has been added to the two-passenger runabout and four-passenger surrey models a high-wheel open-bed light delivery wagon model, of the democrat wagon type, especially suited to farmers' use. A load of 500 to 800 pounds can be carried in the space beneath and back of the front seat, and in some makes an extra double seat can be set in the back to accommodate extra passengers when the vehicle is to be used as a passenger conveyance.

Other light work wagons with open-bed bodies particularly suited for agricultural uses but fitted with longer bodies and having a load capacity of 1,000 pounds or more and costing \$1,000 and upward, are manufactured by several companies in the East and Middle West. They are

excellently suited to carrying to market good-sized loads of vegetables, fruit, dairy and barnyard produce weighing from one thousand to two thousand pounds, and for hauling back loads of feed, fertilizer, fencing and building materials, farm machinery, and so on. The high wheels give the axles and driving mechanism a good road clearance, and the construction is of a heavy and durable as well as simple character.

Numerous cases might be given of motor cars put to special service in connection with farming. In Maryland there is a high-class dairy farm where motor delivery wagons are used altogether to distribute milk among the consumers in the vicinity, and in Indianapolis a large milk company is using a 1½-ton and a 3-ton gasoline truck in the collection of milk from dairy farms within a radius of twenty-five miles of the city, which was formerly shipped by the inter-urban electric railways or by horse and wagon. In England a large produce grower sends his fresh vegetables to market in a huge motor van, the roof and tailboard of which, as well as the inside, are piled with green goods. These examples seem to foreshadow the time, not very distant, perhaps, when farmers will find it cheaper and more convenient to ship all of their farm products to market on motor trucks than to haul them with horses and wagons. Possibly the trucks will be owned by local express companies organized for the purpose, which will charge a reasonable price for haulage, so that it will pay the farmer better to keep his horses—if he needs any then—at work in the field, and he will not need to invest any capital in the motor trucks. Doubtless some of the transporting companies will use motor tractors, which will run over regular routes every morning and pick up a string of farm wagons loaded with produce, hauling them to market and back again for a fixed charge. A single tractor should be able to haul four or five such wagons over good roads.

In Connecticut a three-ton truck is regularly used for hauling grain and carrying all sorts of farm supplies and products for a 1,300-acre farm. This is one of the many fancy estates conducted in the East by wealthy owners largely as a personal hobby, yet at the same time as a profitable investment. The truck represents an outlay of \$5,000, and is kept in a special garage for work motor vehicles which are to be used extensively on the farm.

A ranch of several thousand acres in Montana is conducted without horses, the plowing, sowing, cultivating, reaping, threshing, and hauling of the grain to the railroad being done by motor tractors and motor wagons. We



A motor wagon carrying a load of farm produce

have had the horseless street car for twenty years, the "horseless carriage" for ten, and now we have the horseless farm. May we hope some day for the horseless city?

While the foregoing examples are isolated cases and apply to farming on an extensive scale with ample capital, they point to great possibilities for the future use of self-propelled vehicles in farm work, utilizing gasoline, kerosene, or denatured alcohol as fuel. The farmer with a small acreage who would not be justified in buying a motor tractor for his own use, will be able to hire his plowing and threshing done by companies operating motor tractors, as for many years he has had his threshing done by itinerant steam threshing outfits. And, incidentally, the work will be done cheaper, there will be no danger of fire from flying sparks, there will be little or no water to haul, and there will be fewer men to feed.

In this country, as well as in England and France, there are large companies that make a specialty of building small farm tractors for universal tractive and stationary power work. A company in Minneapolis makes an 8-horse-power tractor weighing 5,500 pounds for such work as operating hay presses, corn shellers, etc., and for drawing wagons and portable machines of this class on the road. In York, Pa., is another large company that makes motor tractors and traction engines in ten sizes, from 1,000 to 36,000 pounds in weight. The smallest is rated at $1\frac{1}{2}$ to 2 horse-power, and is intended for all sorts of farm work, such as hauling the stone-boat, churning, pumping, feed cutting, etc.

American motor tractors used for plowing and threshing usually develop from 12 to 35 horse-power and weigh from 5,000 to 20,000 pounds. They haul gang plows

turning from two to eight furrows at a time. One of these—a 15-horse-power tractor built by the largest harvesting machinery company in the world—plowed 1.09 acres of "gumbo" soil with a three-fur-

row, 12-inch bottom plow in an hour and a quarter on a consumption of $1\frac{1}{2}$ gallons of gasoline per acre at an international competition held in Winnipeg last July.

A "wagon tractor," built in Peoria by a great agricultural implement works for general utility purposes in the field and on the road, was tested at the same trials.

Coupled to a two-furrow, 14-inch gang plow, it turned over 1.06 acres in 1 hour 25 minutes on a consumption equivalent to 3.36 gallons of gasoline per acre. This would amount to about 50 cents an acre for fuel. In a ten-hour

day, $7\frac{1}{2}$ acres could be plowed for about \$3.25, not including labor.

This wagon tractor is a very interesting vehicle. It was designed particularly for farm purposes by men who are familiar with the peculiar requirements, and combines in one machine a truck for carrying loads on its own body, a tractor for drawing plows and other farm machinery, and a power plant for driving threshing machines, hay balers and other stationary machinery by belt. It will take the place of several teams and wagons on the farm.

Nowadays, on the farm as well as in the manufac-

tory, it is necessary to do the largest amount of work in the shortest time in order to make an undertaking successful. This is recognized by the progressive farmer and farm machinery builders, and to a large extent the advantages of the motor car and motor tractor are appreciated by builders of farm wagons and buggies. Most of the leaders in these fields are now offering their customers a motor buggy, a motor car, a motor wagon, or a motor tractor.

While all the above-mentioned machines are driven by gasoline en-

gines, mention should be made of a steam automobile produced by a firm that used to build sewing machines, but which has made an unexcelled reputation in the steam motor vehicle line during the

past decade. The power plant of this company's \$2,000 touring car consists of a compound steam engine, the steam for which is supplied by a "flash" boiler heated by a liquid-fuel burner. In place of gasoline, kerosene oil is now used for fuel with success, and as the latter is universally used for lighting purposes in the country districts, fuel for the auto is always available. For the use of those farmers who

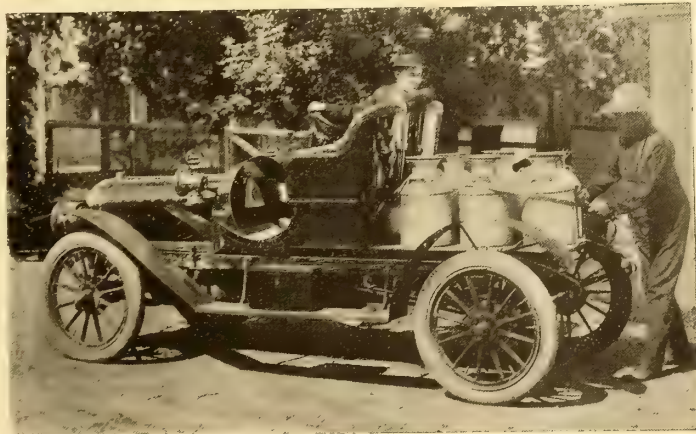
know nothing about a gasoline engine, but who are familiar with steam machinery, the above-mentioned car will probably be preferable. It has all the improvements of the up-to-date gasoline machines, such as shaft drive, two-speed transmission, etc., besides which it is a very speedy and a powerful car.



A high-wheeled farm wagon on the road



With a reel of wire and a box of tools, the pasture fence is quickly repaired



Half a dozen cases of milk are carried to the creamery and the empty cans are quickly returned



Among the rhododendrons and the ferns



Japanese gateway and lantern



Yama-no-uchi and Its Trout

By Carlyle Ellis



UP ONE of the steep, seamed gullies of the Catskill foothills one climbs from the village of Napanoch. The range, like the Adirondacks to the north, is filled with just such wooded gorges. A mountain stream divides it and a mountain road laboriously climbs one side to the farmed tablelands above. We are in a region of the familiar.

The road takes us past simple cottages with their tiny squares of corn and potatoes and their borders of sunflowers and dahlias. Then it plunges into the unbroken woods. A turn and we are at the gate.

It is not like any gate we have ever seen. It gives more than a hint of foreign lands, which the lantern at once proclaims Japan. Yet we accept it at once. Our surprise is at its fitness and its beauty, not at its strangeness. We can



The bridge and the mill

imagine no surroundings where it would be more harmonious.

The main upright posts with their wide-reaching cross-piece are twenty-one inches square and tipped with square iron caps. The road gates are of solid wood, ten feet high, bolted into solidity by rough-wrought iron and swung on great iron hinges. Over the smaller door, of similar design, a simple grill harmoniously suggests Japan. The wood is native chestnut, weathered a pleasant brown.

Outside is placed the lantern stand, twelve feet high and characteristically Japanese with its curved roof.

The big lantern, a glowing, flesh color, bears an inscription in Japanese ideographs. "It is Yama-no-uchi," says the guide, "and it means 'home in the mountains.'"

Yama-no-uchi, it may be well to explain, is the country home of Mr. Frank Seaman, of New York, and its fame is threefold. It is known as the best adaptation of Japanese architectural principles in America, and as having the best collection of Japanese iris outside of Japan and the most successful trout preserve in the Eastern States.

Driving through the great gate we follow a very beautiful winding road through virgin timber. The ground is carpeted with maidenhair fern through which hundreds of yellow cypripedium (loveliest of native orchids!) raise their heads. Banks of mountain laurel and rhododendron shine in more open spaces through the trees. It is all natural and beautiful. If there is art it is the art that conceals art. No plant that is not a native of the valley is found. Along one side of the road the mountain brook tumbles between banks of fern. Following it a path of great, flatly irregular boulders dips and turns, leading to leafy mysteries below.

Of a sudden the road approaches a curved Japanese bridge, a small fac-simile of the famous one at Nikko, glowing a wonderful crimson against the green. The Nikko bridge is the only other that has just this shade of rich color, for there is but one family in all Japan that makes the lacquer and has been making it for four hundred years. It is manufactured only for the Nikko bridge. The honor is great. To have secured some of the lacquer for the

Yama-no-uchi bridge was an achievement in diplomacy.

Beyond the red lacquer bridge is a charming little Japanese structure of rough stones, all in gently curving lines. Behind is a stone wall and below a great overshot water-wheel. In the watch-tower-like building is a dynamo that generates electricity for the estate and a pump to distribute water on the higher ground. From the bridge one gets a glimpse of the little lake above the wall. It is partly surrounded by drooping willows and from the high bank at the upper end water comes tumbling over rocks, indicating another lake above.

To the left of the road is a great wall of rounded stones

that curves vertically in a line that is strong and yet gentle. It is surmounted by a large Japanese building of beauty and simplicity, which fits its enviroing hillside with striking aptness. There is no sense of the incongruous on finding these unusual roof lines in American surroundings. The combination is so good in its balancing proportion and intimacy of decorative units that you accept it instantly. This building might, it seems, be fitly the home of a wealthy and comfort-loving artist. We gaze at it enviously. It proves to be the stable and garage, and a very practical one at that. There is every excellence of construction and equipment here and a plainness that makes for practical beauty. Many stables no larger or more complete, of no more adequate construction and much less attractive have cost several times as much. A most important



The lake at Yama-no-uchi

phase of Mr. Seaman's achievement in the making of his mountain home is the economy that has resulted from his doing things in a simple, practical way and getting beauty directly into them instead of plastering it on afterwards. For instance, if he were building a woodshed, he would build it of rough boards and ordinary shingles, but it would be so placed that it made a pleasing part of the landscape picture and the lines of the roof would bear their artistic relation to the lines of the hill behind and of the buildings adjoining. If there was a window, it would be as plain and practical as any, but it would have a distinctive and decorative quality in its plainness.



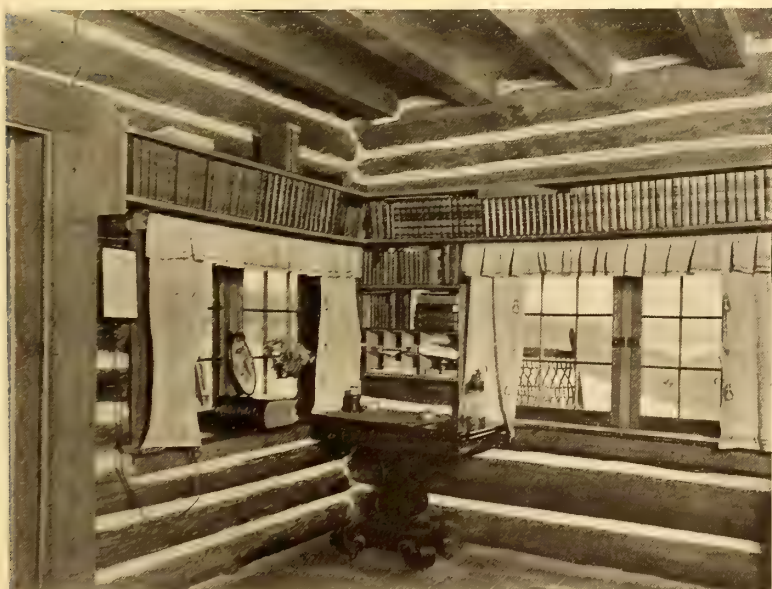
The log house at Yama-no-uchi

Following up the road from the stable the five successive trout ponds spread out below one, their dividing dams bearing great weeping willows. One side of the ponds is deeply wooded, the other broken by great irregular iris beds planned Japanese fashion and grassy slopes. Every nook and corner of the ponds has an unstudied beauty that is delightful.

Between the upper ponds and snuggling happily against a steep slope is the hatchery, a most interesting building, considered the best private hatchery in this country. As exemplifying the architectural principles regarding the minor buildings already enunciated it is an excellent example. The building is in four sections, each separate in design, but built with intimate relation to the others and to the environment. The common feature of most prominence is the curved-over edges of the roofs which gives

a pleasing softness of line like that seen after a heavy fall of snow. The lower section, seventy feet long, is the vat room and has a capacity of 3,500,000 trout spawn. Windows run its entire length and against these are the glass experimental observation and specimen tanks. A four-inch stream of spring water at a temperature of about 40 degrees Fahrenheit, flows through the tanks endlessly and discharges into the pond below. It is this perfect water supply that is the foundation of Mr. Seaman's success. The source is a group of springs a few feet above the hatchery. These give a steady supply every day in the year.

Next to the tank room is an office where very complete records are kept. The roof of this section runs at right angles to that of the first and is two feet higher. An odd grill window of Japanese suggestion projects at the end and is roofed by the outward curving of the wall boards.



The book shelves in the living-room



The fireplace in the living-room

The third section is another step higher and is used as workroom and refrigerator. The fourth is an extension of the third with a further step upward on the roof line. It is used as an ice house, being filled from the road which is immediately behind it and on a level with the eaves.

Around the hatchery are small ponds for live food and for isolation, and in front, set in the fourth pond, are the outdoor tanks to which the newly hatched fish are transferred in the spring.

In these tanks they are kept until they are old enough to fend for themselves. The older trout are not above eating the very young, and a few two-pounders will work terrific havoc in a pond of babies. In fact, four-year-old trout will eat one-year-olds, so that the necessity for two or three ponds and grading is absolute when there are many fish, as the most systematic and thorough feeding will not eliminate these cannibalistic tendencies.

This matter of feeding is, next to an adequate year-round water supply, the prime factor in trout raising. Mr. Seaman's experiments in this regard have had important results. He has shown that with proper feeding, he can grow brook trout (which naturalists call a charr and not a trout at all) with the same exquisite flavor as that of the wild trout. This many growers have failed to do because of the time-honored custom of feeding chopped liver. Even when these are untainted, the flavor is transmitted and it therefore becomes necessary to revert as far as possible to natural food. This consists of insects and smaller fish. At Yama-no-uchi outside ponds and streams are set aside for the propagation of fish food and this summer a series of experiments in the growing of food insects is to be tried with the assistance of members of the faculty of Cornell University. At present the trout ponds are equipped with clusters of electric lights set close to the water. These attract myriads of night flying insects which, touching the water, find a ready welcome.

When artificial feeding is necessary, as during the winter months, in case it is desired to fatten the fish for the spring, chopped fresh beef and wheat pancakes cut into small squares are used. Even the free use of these, it has been found, makes no difference in the flavor of the fish though Mr. Seaman strongly favors the exclusive use of live food.

While we were visiting the ponds the time came for the trout's daily meal. As we approached the lower pool where the biggest fish are, there was no sign of aquatic habitation. With a tin dipper finely chipped beef was broadcasted within a radius of ten feet. Instantly there was turmoil. Magnificent speckled fellows from fifteen to eighteen inches long came dashing to the surface with all manner of twist and curve. Heads and tails and sometimes whole shining bodies appeared above water and disappeared in the exhilarating scramble.

Mr. Seaman took a piece of beef between thumb and finger and held it at the surface ten inches from shore. It was gone with a flash in the next second.

In the next pond, of the eight-inch trout, the excitement was even greater for here there were about 10,000 fish each apparently with a prodigious appetite. Altogether Mr. Seaman wintered about 50,000 trout and he will have half a million more from his hatchery this spring. In two years these will be of edible size and could be sold in the New York market at from seventy-five cents to \$1 a pound.

This subject of trout breeding has been treated at some length not only because of its pre-eminent success at Yama-no-uchi but because it suggests a new field of practical and scientific interest to the city man with moderate means who is fond of the outdoor life. Enough has been said to show that on the scientific and technical side it is a fascinating study and that on the practical side it is a hobby whose success can be measured in very large profits. Further than that it gives a reason for developing an estate in the ideal

location, a mountain gully, and for the building of ponds, than which there is no more beautiful or satisfying feature.

The Yama-no-uchi ponds are true beauty spots at all times and they are large enough for skating in winter and a little canoeing in summer. On the shady side of one of them a little tea garden overhanging the water has been built and this is being covered with Wistaria after the Japanese fashion, adding still another charm to their attractiveness.

Overlooking the ponds and the whole valley below a Japanese tea-house has been built and this is another of the adaptations from the Orient that, however foreign, fits into the picture with surprising aptness. The house is built on a ledge of bare rock, the lower part of the usual rough boulder masonry in pleasing inward curves and containing a small reservoir. Above this is the tea-house itself, wholly Japanese in design but built of native chestnut by American workmen all recruited from the village below. It is one of the distinct achievements of Yama-no-uchi's development that it has been entirely the work of native labor. Not even city carpenters were used but Napanoch men whose regular wage scale was \$2 and \$2.25 a day. There has thus been a saving throughout of more than fifty per cent. in the cost of labor, made possible, of course, by the most expert and intimate personal supervision.

It is well worth mentioning here that this detail plan and its fulfillment is entirely the work of an American woman, Mrs. Olive Brown Sarre, an authority on Japanese architecture and landscape gardening and Japanese arts and crafts. That Mrs. Sarre was able to build this exquisite tea-house practically without the driving of a nail, using the Japanese joints and wood pin methods exclusively and employing only ordinary American village carpenters is perhaps adequate tribute to her ability, though there are a hundred other evidences of it throughout this charming and unique estate.

Another notable feature of this work is the fact that only native materials were used. The estate includes several hundred acres of woodland which furnishes a plentiful supply of chestnut, the best substitute for the beautiful Japanese woods, and stone was found in abundance on the ground. The economy of this procedure is apparent.

A very charming site for the house which has not yet been built and which is also to be of Japanese architecture, is reserved near the ponds. Till then one climbs on up the hill to the edge of the plateau. Here, overhanging the valley and with a magnificent view of the opposite ranges is the "farmhouse." One quotes farmhouse and emphasizes it with a little agreeable irony because it is really just the sort of earthly paradise most of us have been dreaming of, provided our imagination for pleasant things is good.

One end of the house is log cabin, the other Swiss chalet, and a more charming and harmonious combination were difficult to find. A great low living-room with wide old-fashioned fire-place and sweeping outlook forms the center of the scheme. Therefrom are bedrooms each with its fire-place, the stripped logs and planed beams showing frankly wherever they were needed.

Up here is the practical end of the estate. It is not intended to form part of the Japanese scheme though the touch of an artist-craftsman is shown in a hundred details. One's interest is aroused by the model chicken houses with their aristocratic occupants, by the large experimental gardens and orchards where soil problems common to this not over-productive district are being worked out for the common good, and by the squab house where Mr. Seaman is proving the profitableness of this seemingly uncertain industry. On our visit we met a flock of eight or more handsome young turkeys and find that the still more difficult problem of raising the Christmas bird in this climate has also been solved with unequivocal success.

The Finest Collection of Antique Watches in the World

Bought by J. Pierpont Morgan

By Charles A. Brassler



THE most famous collection of artistic antique watches in the world has been acquired recently by Mr. J. Pierpont Morgan, and will be added to the unique collections of costly art objects upon which the discriminating American millionaire may justly pride himself. Last year a portion of the collection, comprising about forty remarkable watches, was sold to Mr. Morgan through the agency of Seeligman, the dealer in antiques, for \$150,000, whereas the rest of the costly Marfels collection, unique in the whole world, remained in the possession of the collector, who had rummaged Germany, France and all Europe to find them and expended a fortune in their acquisition. When Mr. Morgan recently paid a visit to Rome, he met Mr. Marfels, and as a result of the interview, the remainder of the collection, forty more rare watches, the admiration of every connoisseur and every one a masterpiece of the engraver's and enamel painter's arts was transferred to the American millionaire, for \$225,000, making the total price of this unequalled collection, \$375,000. Among the specimens he acquired is a superbly decorated Limoges watch, also some exceptionally large Louis XIII enameled watches,

having on the cases wonderful pictorial representations of scenes from biblical and ancient Roman history. They are, to-day, all the more valuable because the technical processes of their production are supposed to be lost and apparently, in spite of every experiment and effort, cannot be re-discovered.

In addition to some conspicuously beautiful watches in egg and crucifix form, there may be mentioned the smallest watch in the world, having a diameter of but nine millimeters—five-sixteenths of an inch. The wheels and pin-

ions of this watch are made so small as to be almost invisible to the naked eye.

Some time ago Mr. Marfels patriotically offered the collection to the Prussian government, at a price considerably below that paid for it by Mr. Morgan, to prevent its going out of that country. His offer was not accepted and the peerless collection is now forever lost to Germany. It is to be hoped that in some museum the American public will be afforded an opportunity of inspecting this collection, from which, possibly, the American watchmaker, and espe-

cially the artist and craftsman, may derive inspirations that will result in the watch being restored to the place it once held as an article of personal adornment, instead of being hidden away in the pocket.

At the same time, admiration will be aroused for their artistic perfection, for among the specimens are included only handsome pieces of the highest artistic value, carefully selected, with rare discrimination by Mr. Marfels from the thousands of antique specimens submitted to him. Just here the process of selection by which such a rare and beautiful assemblage of ancient time pieces was accumulated becomes of significance, and it will doubtless interest many of our readers to learn something of the motives that led the collector to embark on so costly and so



1—Gold enameled watch, 17 Century. 2—Gold enamel watch, 17 Century. 3—Gold enamel watch, 16 Century. 4—Egg watch finely engraved, 16 Century. 5—Gold enameled watch, Louis XIII. 6—Gold enameled watch, 17 Century. 7—Costly Gold enameled watch, 17 Century.

difficult an undertaking. The entry of Mr. Marfels into the field as a collector of antique watches was due to the merest accident. He was at the time the traveling representative of a well-known firm dealing in watch materials, and a friend, knowing that he constantly came in contact with watchmakers in all parts of the country, suggested that if he came across anything curious or meritorious in the shape of an antique watch, he would be pleased to have him purchase it on his account. Becoming known through this

to his "trade" as a collector of such things, he was frequently afforded an opportunity to purchase, on advantageous terms, all sorts of antiquities that had been treasured, perhaps, for many generations, as heirlooms, without the owner's having any real conception of their value. In this way, on one occasion, he acquired an old enameled dial for a mere trifle, having purchased it only to please a prospective customer.

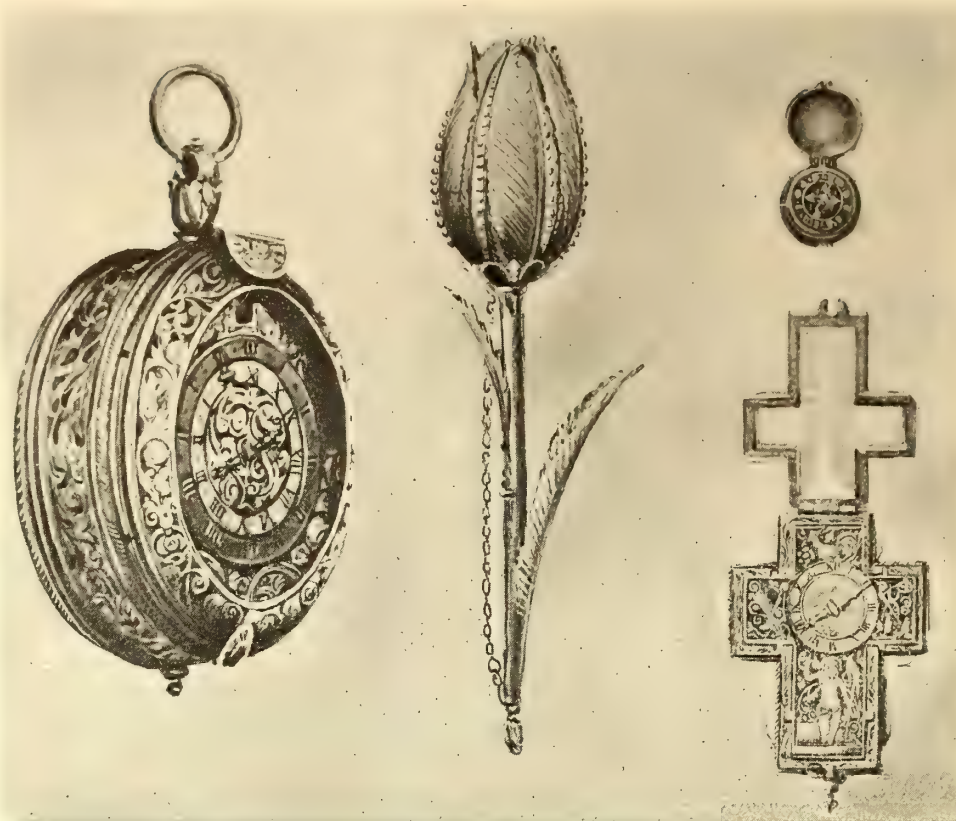
While subsequently examining it at his hotel, it was observed by another guest, who after inspecting it offered the sum of five marks. The hotel keeper, who had overheard the conversation, after looking at the dial, offered ten marks for it. This aroused Mr. Marfels' curiosity, and he asked the contestants what they proposed to do with it. One dodged the question; the hotel keeper more frankly stated that he proposed to give it to one of his guests, who, as a director in a trade museum, was interested in such things. This disposition of it appealed to Mr. Marfels, and he finally parted with the specimen for twenty marks. Although he later ascertained that it had no real value, the incident impressed him with the fact that for almost everything there is an admirer to be found, and just this simple incident started him on his career as a collector. From the character of his business, he was naturally more familiar with watches and watch values than with any other productions, so that he was led to devote his attention to this particular field. He speedily recognized the fact that old watches, as merely "old," were often hardly worth the metal entering into them, that their merit lay almost entirely in their artistic features, and by visiting museums and studying what literature on the subject was available, he sought to familiarize himself with the particular phases of artistic development that had been associated with the decoration of the watch; the names of the artists who had achieved distinction in this line; the characteristics of their work and the subjects they usually selected

for their efforts. At the same time, he learned to discriminate between a watch that was merely old—and for this very reason often next to worthless—and one that in its form and decoration, bore testimony to the artistic taste and skilled execution of a certain period. By this means and by an expensive process of selection and rejection, he fitted himself for the gathering of his superb collection of antique watches, every one of which had some special merit. The unique character of his collection was recog-

nized by the highest authorities when a gold medal was presented to him at the horological exposition held at Nuremburg, Bavaria, to celebrate the 400th anniversary of the construction, by Peter Henlein, of the first portable pocket timepiece, an achievement commemorated by the erection of a monument to the ingenious locksmith in that famous old city.

The locksmiths, to whose trade, according to the old time regulations of the "guilds"—the unions of the Middle Ages, which if not so tyrannical and unreasonable as the unions of to-day, were infinitely more influential and conducted with great foresight and intelligence—originally belonged the business of making and repairing clocks, and Peter Henlein, to whom the first pocket timepiece is credited, was a locksmith. They made their watches with iron works, by hand, the case being of round, caddy shape, until gradually a school of skillful horologists was evolved. Their products were quite expensive, so much so that the

masters of the goldsmith, engraving and enameling arts, did not consider it beneath their dignity to devote their talents to the creation of suitable cases for these clever little machines. Hence the beautiful specimens that formed the object of Mr. Marfels' solicitude and for which Mr. Morgan was willing to pay such a good price. A watch, in those days, was not as now an article generally owned; only rich people possessed watches



8—Egg watch with alarm in finely engraved case, the frieze with ornaments in pierced work. 9—Gold tulip watch, pearl studded and enameled pressed; tulip opens and shows watch; 18 Century. 10—Smallest watch in existence; actual size: 1650. 11—Cross watch, dial represents Christ's resurrection; 16 Century.



12—Gold watch prism shaped; Lyon 1564. 13—Gold watch prism shaped; German coat of arms, 1564. 14—Gold watch prism shaped; Emperor Charles V, 1564. 15—Small gold egg watch, enameled dial; 1600. 16—Reverse side of small gold egg watch, St. George and Dragon. 17—Gold enameled watch, shell shaped, set with pearls; 1800. 18—Gold enameled watch, repeater, diamond studded; London, 18 Century. 19—Gold ring with watch, diamond set; Louis XVI period. 20—Cross watch, dial engraved with resurrection of Christ; 16 Century.

and it was a hobby with some of them to own a peculiarly beautiful or original timepiece. Their tastes ran in different directions, some preferring decorations in which mythological or biblical subjects were portrayed, others historical pictures, others allegorical or purely ornamental designs, while still others, and their number was not as great, were satisfied later on with a comparatively plain case, but wanted works of elaborate finish, or embodying unique features, such as mechanical and musical attachments, striking and repeating works, calendar and astronomical movements, etc. It must be admitted that these ancient watches, however elaborate their housing, were not distinguished for accuracy as timekeepers, the first watches having only hour hands and no such escapement as we are familiar with. A goblin striking against a hog-bristle, set vertically in the plate, caused the reciprocal movement by which the spring action was controlled. About 1660 the hair-spring, or balance-spring, as a means of regulation was invented simultaneously by Dr. Hooke and by Huyghens, to whom we owe the application of the pendulum to the control of the escapement. Until the commencement of the nineteenth century, all watches had the verge escapement, and this and other features of historical record, are depended upon by collectors and connoisseurs, in establishing the age of a watch. Thus chased watch cases were unknown until the beginning of the eighteenth century, and most of them came into vogue about 1750. Until about 1770, decoration in four-colored gold was not known. The period of the rock crystal case is from 1550 to 1650, and the finest of engraved and enamel decorated watches date from this period. Soon after this the minute hand was introduced, and it is found quite generally in watches dating from about 1700. About this time, too, the watches with pierced cases, showing decorations in foliage and animal figures, attained their greatest perfection. Handsome watches that can certainly be identified as belonging to either of the above periods are valuable, as are also really old watches, of the first cylindrical pattern, with iron works, and all that have really artistically decorated dials and cases, as well as all "egg" watches and watches with finely pierced or elaborately chased cases that show no wear.

The egg watch was not the original form in which the

pocket timepiece was made by the expert Nuremburg locksmiths, but the "Nuremburg Ei" was famous throughout Europe, when the watch was still a rarity. It was a skilled mechanic, Charles Cusin, who carried the art of watch-making to Geneva, and founded there the industry for which Switzerland is pre-eminently famous. Quite a few of the specimens in the Marfels collection are of this egg shape and they are all artistically and very elaborately decorated.

When, towards the close of the eighteenth century, the watch disappeared altogether into the pocket, except for the few dainty specimens worn as chatelaines, locket, etc., the case lost its importance as a work of art and became a plain box, usually of gold or silver, and sometimes elaborately chased, but no matter how costly, only a housing for the works, which have advanced in accuracy and precision of performance as the case has become plain and simple. A few years ago the fashion of wearing a watch pinned to the corsage was started among women. This naturally brought about a temporary revival of the artistic in watch cases and some beautiful specimens in enamel and jewelled work were to be seen. But the fashion has died out, the attraction the display, in so easily accessible a place, of an expensive trinket had for the light-fingered fraternity, having contributed to its discouragement. In the precision of its performance, however, the modern watch altogether surpasses its more richly encased predecessor, although, when attention was first bestowed more particularly on the works, some of the more conspicuous parts were often elaborately and curiously wrought. The balance cock and the dials and hands were especially selected for this decorative work, and often an immense amount of skill and labor were expended on their ornamentation.

In considering the performance of the old-time watch, moreover, it must not be forgotten that everything had to be fashioned by hand; that such a thing as division of labor and interchangeability of parts, which have been brought to so high a degree of perfection, especially in the American watch factories of to-day, were entirely unknown when the watches in the Morgan collection were made. Every part had to be made by hand, after elaborate calculations, and a watchmaker, at that time, was a scientist as well as a skilled mechanic.



21—Gold enameled watch, repeater, translucent enamel; London, 1790. 22—Gold enameled watch, repeater, blue translucent enamel; London, 1790. 23—Gold enameled watch, flower inlaid; Paris, 18 Century. 24—Gold repeater, pierced work and diamond studding; London, 18 Century. 25—Gold open work repeater, agate mounted and precious stones studding; London, 18 Century. 26—Gold enameled watch, repeater enameled and diamond studded; London, 18th Century. 27—Gold open work repeater, studded with rubies, diamonds and emeralds; London, 18 Century. 28—Watch, mother of pearl case, gold enameled, hunting and tournament; London, 1700. 29—Gold enameled watch, set with rubies and pearls in iridescent enamel; Jaquet Droz, 1800. 30—Gold enameled watch, translucent enamel and pearl studding; 1790. 31—Watch in gray agate case, chased; London, 1750. 32—Gold enameled watch, blue translucent enamel framing, female portrait; London, 1780.



Fig. 1—A house with a lean-to roof

Some Houses at Meadowdale, Bronxville, New York

By Paul Thurston



THE many faults of the average American suburban house in the past can be easily traced in part to the inexperienced architect and in part to the persistent ideas which the home builder wishes to have expressed in his home, irrespective of the best advice he may have received on the subject. This is not so, now, for the reason that the average business man, when he contemplates the building of a house, consults and studies thoroughly all the magazines devoted to such a subject and when he gives his order to the architect, whom he has selected to do his work, he has a comprehensive idea as to the kind of a house he wants to build, the style of architecture in which it is to be built

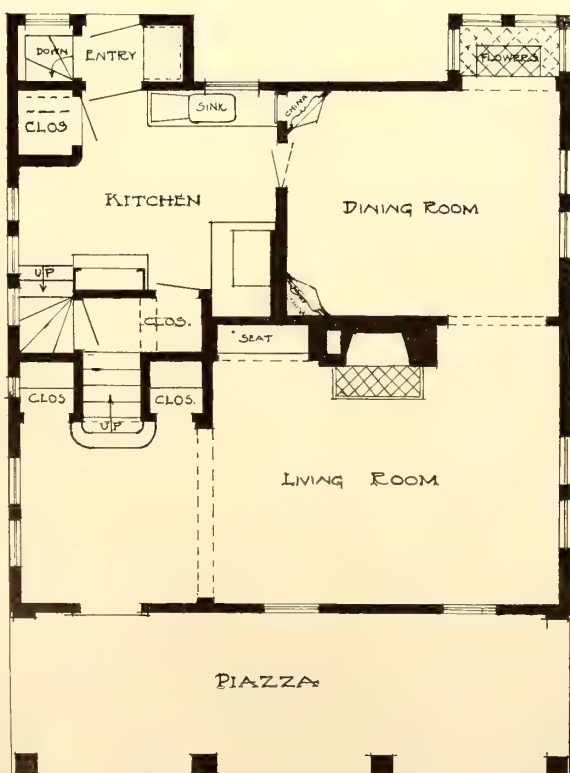


Fig. 2—First floor plan

and the sort of material of which it is to be constructed. With this assistance on the part of the owner the architect is able to work along a similar line of thought and the result is that the architect has produced something better than he would have accomplished if left to his own inclination.

The houses presented in the engravings, herewith, have been erected at Meadowdale, Bronxville, New York, and

while they were built by several different owners and were designed by two different architects, they are so constructed in material and in design that each one forms a perfect harmony with the other and the result is that the entire property has the aspect of having been designed by one architect.

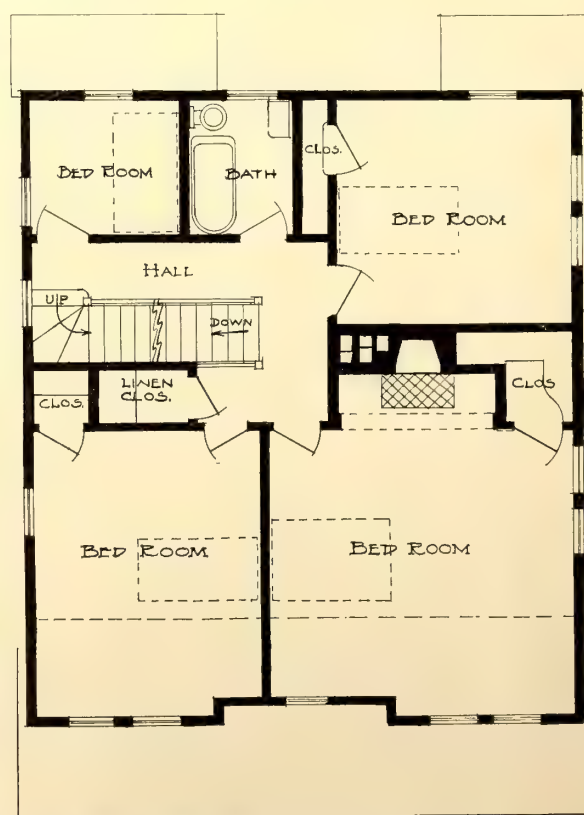


Fig. 3—Second floor plan



Fig. 4—The living-room

The house with a lean-to roof shown in Figs. 1, 2, 3, 4 and 5 was built for Mrs. P. E. Bisland, and is the work of Kenneth G. How, architect, of New York.

The entire building is covered with cement stucco and finished in a soft gray color, while the trimmings are stained a soft brown. The entrance to the house is direct to the hall, which contains an ornamental staircase. A broad archway opens to the living-room, which occupies the remainder of the first floor of the house. This living-room is provided with an open fireplace built of brick, with imitation caen stone facings, and is finished with a massive wooden shelf supported on corbel brackets.

The dining-room is finished with a white painted trim, has a corner closet with a glass door, and a flower window is built at the rear of the room and enclosed with glass.

The kitchen and its dependencies are fitted up complete and are provided with all the best modern conveniences.

The second story contains four sleeping-rooms and a bathroom, the latter being furnished with porcelain fixtures and exposed nickel-plated plumbing.

The third floor contains the servant's room and ample storage space.

The heating apparatus, fuel-rooms and laundry are placed in the cellar.

The house shown in Figs. 6, 7, 8 and 9 was also built for Mrs. P. E. Bisland, and was designed by William A. Bates, architect, of New York. It is of an entirely different style of architecture from the house shown in Fig. 1, for there has been more freedom taken in the designing of it, and while its lines are very irregular they are sufficiently blended together so as to form a harmonious whole.

The exterior is constructed of stucco for the first story and half-timber work for the second story. The panels formed by the beams are filled in with the stucco.

The first floor contains a hall, a large living-room with an ingle-nook which forms the principal feature of the room, a dining-room, kitchen and pantries, while the second floor contains five bed-

rooms and a bathroom, and the third, one bedroom and ample storage.

Another house built from plans prepared by Kenneth G. How and shown in Figs. 10, 11 and 12, is designed on a more even balance than the other houses of the group. The house is covered with half-timber work throughout, with the panels formed by the brown stained beams filled in with a cement stucco.

The house is planned with a central hall, from which the stairs ascend to the second story.

The living-room is built at one side of the house and is provided with a large open fireplace, while the dining-room and the kitchen and service part of the house occupy the remainder of the first floor.

There are five bedrooms and two bathrooms on the second floor, and one servant's room and ample storage room on the third floor.

A stucco house of good proportions is the one presented in Figs. 13, 14 and 15, designed by William A. Bates and built for Mr. Lawrence. The house is constructed entirely of stucco, including the columns and arches of the piazza.

The entrance to the house is through a vestibule from which access is obtained to the living-room, which extends the entire depth of the house. This room is fitted with an open fireplace, and the stairs to the second floor ascend from it.

The dining-room and the kitchen occupy the remainder of this floor. There are five bedrooms and a bathroom on the second floor and one bedroom and a trunk-room on the third floor.

The twin gable house illustrated in Figs. 16, 17, 18 and 19 was built for Mr. Walter C. Smith from the plans of Mr. Bates. The characteristic feature of this home is the chimney built at the outside of the house, which forms an ingle-nook in the living-room. Like all the other houses published herewith, this one is constructed of stucco and half-timber work. The beams are stained brown, the sashes are painted white and the stucco is tinted a soft gray tone.



Fig 5—The dining-room



Fig. 6—A stucco house of irregular lines

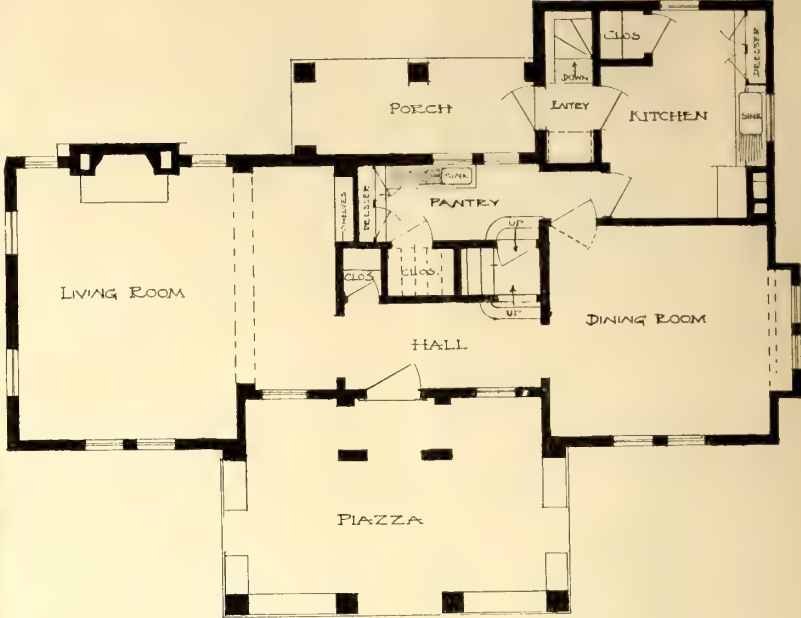


Fig. 10—First floor plan

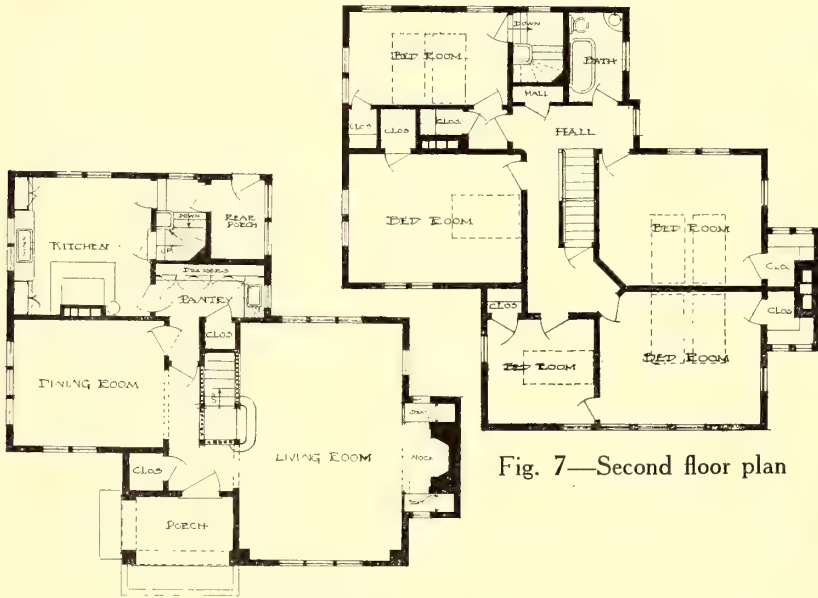


Fig. 7—Second floor plan

Fig. 8—First floor plan



Fig. 11—A house designed in the English style



Fig. 12—Second floor plan



Fig. 9—Another view of house shown in Fig. 6

Some Houses at Meadowdale,

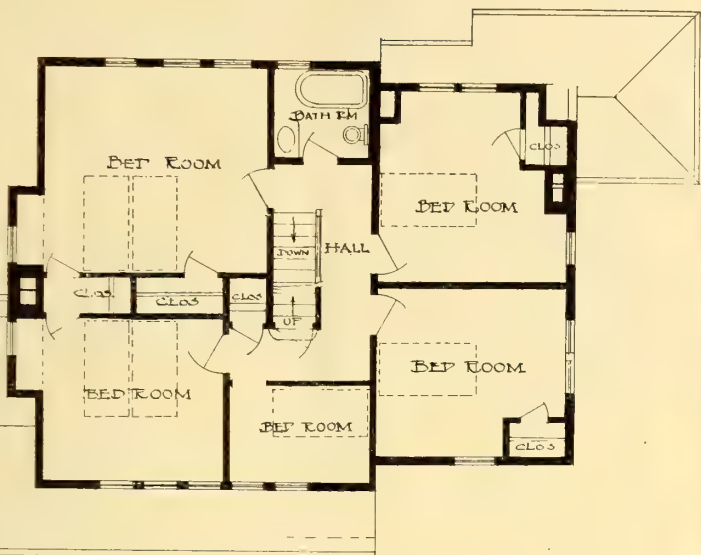


Fig. 13—Second floor plan



Fig. 16—A twin gable house



Fig. 14—A stucco house of good proportions

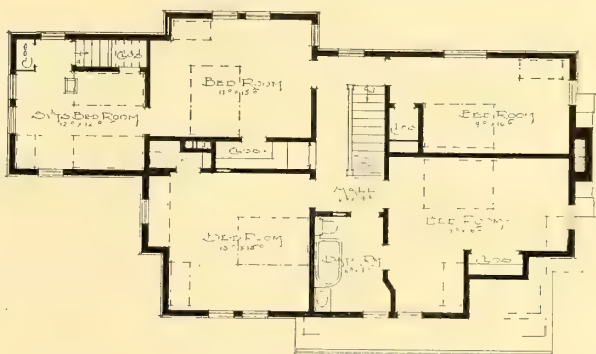


Fig. 17—Second floor plan

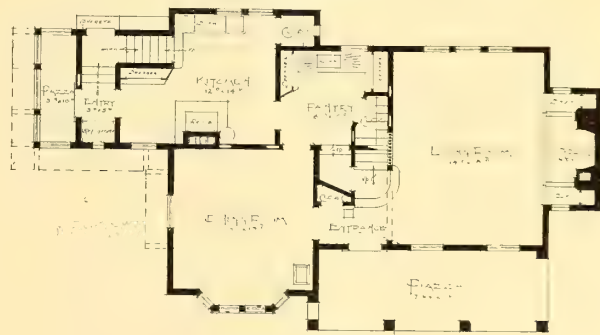


Fig. 18—First floor plan

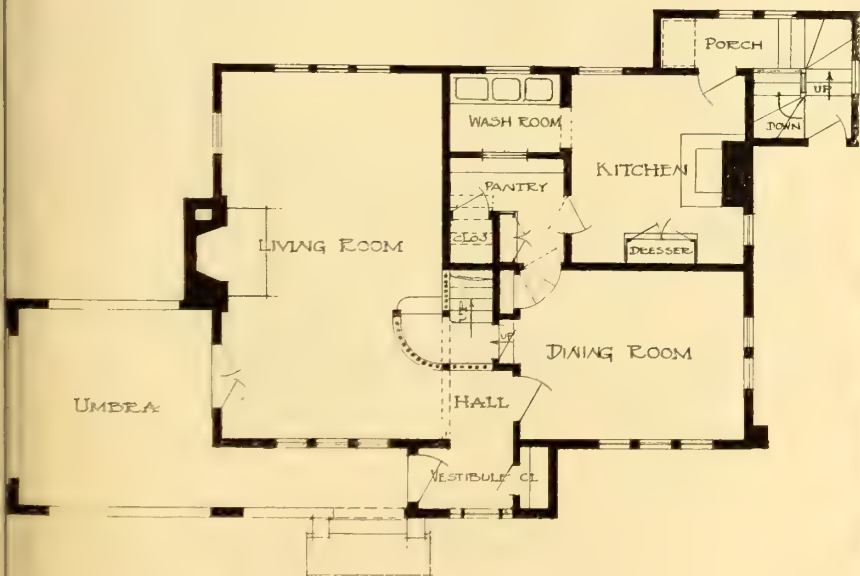


Fig. 15—First floor plan



Fig. 19—Another view of house shown in Fig. 16

Decorations and Furnishings for the Home

By Alice M. Kellogg

V—A Talk on Flower Holders



HE spring and summer seasons mark an era of particular interest to the home maker. At this time, decorative touches may be contributed throughout the house with flowering plants and blossoms, often at no cost except the trouble of gathering and arranging them.

The home garden naturally affords the largest choice in cut flowers, and it is the custom in many country places to cultivate a special plot of ground for this purpose. Here the hand of the invader may ply the shears on both foliage and blossoms without destroying the symmetrical effect of the garden proper.

In the suburbs and country where wild flowers and shrubs are available, one may keep a continuous bloom in the house, beginning with the quaint branches of the pussy willow, and following the advancing steps of spring through the peach, cherry, pear and apple blossoms, and such ground flowers as blood-root, anemone, arbutus and violets. Even cowslips and dandelions have a decorative interest if taken up with their roots about them and planted in a box made of birch bark. As frost approaches and the flowers disappear there is still something provided by nature for home decoration in wild grasses and branches of trees that are distinctive

in outline. How many opportunities the flower season affords for home decoration can hardly be understood except by the sincere lover of nature. Someone has said that a specific note of refinement is contributed to a room by a jar of flowers, and it is undeniable that the attention may be diverted from obtrusively in-harmonious furnishings by the beauty of even a single rose.

On the disposition of plants and flowers in the interior of the home, however, depends much of their artistic success. In the various illustrations some suggestive ideas are given as to suitable holders for flowers, and various ways for their placing.

In the first illustration a set of four small glass vases mark the corners of the lace centerpiece, with a larger holder of the same type in the middle. A decoration of this kind is desirable for breakfasts and luncheons in place of candles and candlesticks, and small flowers with irregular foliage adapt themselves to the slender vases better than large, stiff blossoms. The cost of these "corner" vases is inconsiderable compared with their usefulness (sixty-five cents each), as they may be distributed about the house when not in requisition in the dining-room.

A simple treatment for the dining table is a fern, and its interest is enhanced if it is planted in a jar-

diniere of pleasing shape and color. Some of the Japanese jars in a plain green, glazed or dull finish, may be bought for fifty cents. From our own American potteries there are also jardinières of real merit.

Some attractive holders for plants made from different materials are shown in the illustration. At the extreme left is a fern dish of pierced brass costing three dollars. The hammered brass dish next may be bought for the same price. These pieces have the advantage of linings that fit inside the jardiniere for holding the earth, and also of being raised by little feet to prevent any moisture from injuring a table.

The geranium in the center is planted in a common terra cotta pot which is slipped into the hand-woven Japanese basket. The copper jardiniere at the right of the basket costs the same as the two fern holders at the left. The more ornate holder at the extreme right is suited to a drawing-room or parlor (\$7.50).

A glass bowl with silver work on its outer surface appears in another illustration as a holder for pond lilies. The metal and glass combined in this way do not detract from the delicacy of the coloring of the blossoms. Glass and silver are also united in making a flat plate or plateau, which is used as a mat for vase or jardiniere. Sometimes a colored print is covered with glass and bound with



A set of glass vases

braided around the edges for the same purpose. Or, a piece of choice antique brocade is treated in the same manner and laid on a polished table.

Careful thought should be given to the holders of flowers that are to be displayed on a small tea table. Glass or silver are both appropriate, and good taste suggests that the decorative element should be subordinate to the flowers which are, in themselves, the ornamental feature. A single, beautiful flower placed in a slender, trumpet-shaped silver vase, or a glass bowl filled with one variety of blossoms will contribute more charm than varied colors massed together.

The Japanese understand the charm of simple flower arrangements, and we can learn much from studying their prints of vases and blossoms.

A collection of flower holders should form a part of the furnishings of every home, its size depending on the opportunities for usefulness. Naturally, this collection will be divided into holders that are sufficiently attractive in themselves to be always in evidence, and others that may be brought out for special demands. In country houses a side porch is sometimes equipped with running water, shelves and drawers to facilitate the task of bouquet mak-

For the summer porch there is no more enjoyable decoration than foliage or flowering plants, and in a sheltered corner these may always be an attraction. One may go into large expense in the selection of jardinières if the

Italian models are desired. Copies of the imported pieces are made in this country in composition that resembles stone, and there are also some terra-cotta jars at surprisingly low prices. For large masses of cut flowers these pots may be utilized by placing a pail filled with water inside. The dark-brown papier mache holders that florists use in their shops for cut flowers may be remembered for special decorations that exact more than the usual quantity of vases.

On the porch one may hang the Japanese wicker work holders in which a tin or pottery lining is fitted for holding water. The wicker baskets hung by cords over a pulley make another unique addition to the porch flower holders. The Japanese braided baskets at first thought may seem impractical for flower holders, but these may also be fitted with a lining for holding a

supply of water.

At certain seasons of the year when flowers are not obtainable, one may remember, in the fall, the dried grasses,



A row of plant holders



A row of flower holders



A bowl for pond lilies



A simple table decoration

ing, and in such a place the vases and holders of less ornamental character may be kept. Twine, wrapping paper and pasteboard boxes may also be in readiness here for packing up gifts of flowers.

and, in the spring, the pussy willows, to keep a touch of nature in the home. Placed in suitable holders, one may often obtain quite as ornamental an effect with these quiet tones as with the more brilliant garden blossoms.

“Fouracre”

The Summer Home of the Late A. J. Cassatt, at Bar Harbor, Maine

By Barr Ferree



HOUSE as big as all outdoors and built almost directly on the water, is a terse description of the great rambling summer home built for the late A. J. Cassatt, at Bar Harbor, by Messrs Chapman & Fraser, architects of Boston. It is a vast and comfortable dwelling, built, apparently, with a most delightful disregard of the economy often entailed by cost and space, built in a truly rambling way, room added to room, corridor added to corridor, spreading out, if not in every direction, at least in so delightfully extended a way as to seem almost as endless in extent as it is actually boundless in sufficiency and convenience.

It should not be supposed, however, that all this great upbuilding was done in a haphazard manner or without regard to architectural principles. Mr. Cassatt desired a big roomy house, a house of ample space and ease, a house big enough to live in, in a large and comfortable way, yet of modest and quiet design, suited alike to the situation, to the needs of the house as a place for relaxation and simple living. The programme was simple enough, yet it may be admitted without any hesitation, that the problem might have been solved in a more elaborate manner without any wide departure from the elementary conditions. But one may be sure it would not have been so attractive a house, nor one so well suited to meet the wishes of its large-hearted builder.

There are no frills on this house, and none were wanted. It is the highest compliment that can be paid it to add that none are needed. It exactly meets the requirements demanded of it, and is exactly what it purports to be. Those who knew Mr. Cassatt would instantly characterize it as precisely the sort of a house he would have desired for this place. Other houses, built and designed in a different way, met his wishes in other localities. But here, in the bracing air of Bar Harbor, this is the kind of a house to build, and the sort of a house to live in.

It is a thoroughly excellent type of the large seashore cottage. It is neither a palace nor a mansion, but a really

fine type of the seaside “cottage.” Of course it is large, but that is because it was intended to be big; but with all its size no part departs from the true “cottage” type. In a period when the large seashore house is apt to violate every traditional thought in connection with houses so located, it is something to have a house that so finely illustrates the simple type of architecture, particularly when it does so on so extended a scale.

The house is two stories in height, with great high pitched roofs, a goodly portion of which contains a third story. The first story is built of brick, covered with stucco, with an outer coat of cream white plaster. The second story is frame and shingled, and stained dark brown. The roof is shingled and stained like the second story.

As for the design, the house is “just built.” It has no architectural facade, no ornamental front in the common

acceptance of the word; but it is obviously a house of exceeding comfort and great spaciousness. Where windows are needed they are opened. Where doors are required they are sufficiently placed. If a bay window is sought to add charm to an interior, it is included in the design. Where expansion is required it is allowed; and if contraction seems the better thing then that too finds its place in the plan. Both architects and client must have found abundant satisfaction in the



The hall

seashore home they set about building in this friendly manner; for surely it must have been a friendly work, in which all parties showed a pleasant zest.

Mr. Cassatt's house gives every evidence of a rambling plan, yet this is simply the playful character given it by its architects. It is, in reality, a thoroughly well ordered and carefully studied dwelling, planned with admirable skill and in a thoroughly artistic manner. As usual in large country houses it consists of two parts, the main portion, containing the public rooms and the bedrooms, and a service wing, which is devoted to the servants. As has become much the vogue in later years the last has been deflected at an angle from the main axis, a variation in plan that sufficiently explains its purpose, while giving a welcome mobility to the ground plan and elevations.

The house is entered through a porch that connects with



The entrance front of the house

the porte cochere, a simple little pointed roof structure, with stuccoed brick piers and opened roof frame. Entrance is immediately made to the hall, a large and spacious apartment, comfortably furnished. The ceiling is beamed, but is

otherwise undecorated. The walls are hung with yellow grass-cloth—the most cheerful of all colors for a hall. The woodwork is ash, stained to the color of dark weathered oak. The furniture and curtains are of the most part yellow



The living-room



The dining-room

The living-room is an apartment of splendid size, and occupying a corner of the house on the water side, is most agreeably situated. Two massive beams divide the ceiling into three great panels. The walls are covered with old gray-blue burlap, and the woodwork is birch stained gray. Exposed vertical uprights divide the wall surfaces into panels which are surmounted by a figured frieze between exposed borders of wood. The frieze represents a "Duc de Guise" hunting scene in wood browns, mahogany and dull blues. An immense fireplace fills the space between two windows on one side of the room. It is faced with

and mahogany figured madras. The stairs to the second story are immediately to the right as the hall is entered.

On the right are two rooms, the first directly adjoining the entrance being the library, while the second, and larger room, overlooking the water, is the living-room. The ceiling has exposed beams, with plain undecorated panels. The woodwork is cypress, stained dark green. The walls are hung with gray-green grass-cloth. The furniture is in the Mission style, and the draperies are green figured madras and green velour portieres. The fireplace, which is a conspicuous feature of one side of the room, is faced with green Grueby tile, with a Jungle tile frieze of dull greens, yellows and blues.



The den



The shore front of the house

rough cherry red brick laid with gray joints, and is surmounted with a great dull copper hood. A leathern apron depends from beneath the mantel shelf. The draperies are figured madras in shades of blue, and the furniture is, for the most part, of willow, stained gray-green and with covers of figured cretonnes.

The dining-room is the chief apartment on the left of the hall. Once more this is a room of large size. The ceiling is beamed with small panels and the walls are designed with a panel scheme of uprights and horizontals, the latter being arranged to form a frieze at the top. The wall covering is dull blue figured burlap, with draperies of the same material. Immediately in face, as the room is entered

from the main hall, is the fireplace. It occupies a recess, lined throughout with cherry red brick, with a hearth of quarry tile that covers the entire recess. The fire opening is arched, and is provided with a copper hood. The wood-work is red birch stained dark mahogany. The furniture is mahogany.

On the left of the main hall is a smaller one that serves as a connecting corridor with the rest of the house. Here on the entrance front, is the owner's office, and immediately beyond it begins the very extensive suite of service rooms. There is, of course, a butler's pantry that connects the dining-room with the kitchen, which, in its turn, is associated with a larder and a store room. In the de-



The stable is built around three sides of an open court

flected service wing is the servants' suite, consisting of a bedroom, servants' dining hall, and kitchen, with the laundry at the farthest end. All of these rooms are reached by a corridor that extends along the entrance front. Mention should also be made of the man's room and the housekeeper's room, both of which adjoin the office.

The gardener's cottage and the stable call for some mention. The former is a pleasant little shingled house, two stories in height, with a low pointed roof, that is carried over the second story windows in gentle curves, giving a characteristic outline. The house is shingled throughout.

The stable is an elaborate structure, built around three sides of an open court, the first, or entrance, side of which is enclosed within a solid fence. The gables of the roof are cleverly managed, and form an agreeable grouping. The building is built with a rough sawed frame showing on the exterior, and lined with hard pine planks, planed and varnished on the inside, but left rough on the outside. The whole exterior is stained dark brown.

There is nothing wanting in this place, either in comfort,



The gardener's cottage

convenience or luxury; yet it is essentially a "home" house, a simple, unpretentious structure, so far as a house of this size can be designated as simple and unpretentious. Unmistakably a house built for comfort, it avoids, in a quite striking degree, any character of pretense, any undue ornamentation, any unnecessary decoration, any unessential enrichment of parts, and, very particularly it should be noted, the modern crime of over-furnishing.

It is a comfortable house and therefore a good one. It

is comfortable because that was the prevailing thought, the leading motive, of its upbuilding. And it is good because this comfort has been given acceptable and graceful form by the architects, who, at every point, have risen to the demands of their problem and have solved each difficulty in a plain, straightforward, direct and satisfying manner.

To a very great extent this is the true essence of house-building. It compels success, because no other end than success can be reached if this path is faithfully followed. "Fouracre" is a place that will well repay study for it amply merits careful scrutiny.





GARDEN NOTES

CONDUCTED BY CHARLES DOWNING LAY



BOG GARDENS



HERE a bog garden can be made it is worth trying, difficult as it may be to plan and plant it successfully. It can only be made, of course, where there is a real bog as at the side of a pond or along a running stream in some wet meadow. Places that are wet only in spring will scarcely do, because bog plants demand moisture the year round. To attempt bog gardening with an artificial water supply would probably be futile or at least ridiculous.

The difficulties of bog gardening are, first to clear the bog of the existing luxuriant plants and second to establish the new ones. It is hard to root out plants and shrubs that have been there for years and hard to get new things growing in a satisfactory way. The best way would be to do the work gradually, clearing a small space at a time and then giving all one's care to establishing the plants there. There should be good walks of flat stones or of boards laid in the Japanese manner and it might be so that it could be reached by boat on canals.

It will perhaps be better to divide the garden into several sections, differing in physical conditions and hence in the character of the planting.

In the first section, a region of continuous but shallow flooding and in full sun reaching from the high shore to the pond or stream, the plants with grass-like leaves would find their most grateful environment.

As an irregular border of this swamp garden we could use cattails, and in front of these the sweet flag (*Acorus calamus*) with its fragrant biting root and fresh green leaves. Back of all, perhaps we might have clumps of the tall bamboos. Inside this border of bamboo, cattails, and sweet flag is the place for the Iris which should be planted in great numbers, but chiefly the Japanese Iris (*I. Laevigata*), the yellow Iris (*I. pseudacorus*) and our native swamp iris (*I. versicolor*). In front of the iris and running into the water we can plant the blue pickered weed (*Pontederia cordata*), the white arrow leaf (*Sagittaria latifolia*), the arum (*Peltandra virginica*). Another part of the garden where it is moist but not continuously flooded, and in full sun or half shade, the character of the foliage might be different, using here the cardinal flower (*Lobelia cardinalis*), the blue cardinal flower (*L. syphilitica*), Meadow beauty (*Rhexia virginica*), Forget-me-not (*Myosotis*) and the tall spiraea (*S. aruncus*). In this part of the garden the mints will flourish, together with the loose strife (*Lythrum salicaria*). Joe Pye weed, Helenium, and Rudbeckia should be planted at the back of this region and the marsh marigold as an edging in front. The royal fern (*Osmunda regalis*) and the wild lilies (*L. canadensis* and *L. superbum*) can be mixed in small quantities with this planting.

In a shady protected part of the garden where the soil is peaty will be the place for various orchids, pitcher plants and all the fascinating plants of the heath family, such as the andromedas, laurels and huckleberries.

For beauty in winter the shrubs at the edge of our garden should be red and yellow twigged dogwoods, willows, roses, and for summer the moisture loving clethra and cephalanthus.

LIMING SOIL

A full treatment of the liming of soil would be too long for our space and perhaps too technical for our readers, but it is a matter that should be given serious study by every owner of land.

In general all land that shows an acid reaction when tested with litmus paper should be limed, and very often in a limestone country the topsoil is acid and is in as much need of lime as is the soil in a sandstone country.

The effect of lime is both mechanical and chemical and seems to have something to do with the bacterial state of the soil. It is lasting in its effects as I have proved by accident. Twenty years ago we laid out a tennis court on one side of an old pasture, marking the lines with lime paste. It was put on so thickly that it killed the grass for a season but to-day the lines of that old court are plainly distinguished by the darker color of the grass and by its luxuriant growth; a difference which is most noticeable in a severe drought, because then the grass on the old court lines is green while all the rest is brown and dry.

The mechanical effect of lime in clay soils is very marked. It is a flocculent and gathers the fine particles of clay into larger grains, making the soil softer and more friable and reducing its cementing qualities. The chemical effect is not well understood. It seems to make all the plant food existing in the soil more available, so that lime alone will have as great an effect as phosphates and nitrates applied without lime. Its effect on the bacteria in the soil is not well understood either, but it is plain that the plants which harbor nitrogen-gathering bacteria on their roots grow better on a soil that has been well limed. Hence that old superstition that a dressing of wood ashes (which are mostly lime) brings clover into the meadow.

Lime should be applied when the land is ploughed whether it be spring or fall, or on grass land, at any time in the fall and winter.

Quick lime can be used but it should be slacked by burying in the ground over night, being sure to spread it while it is crumbly and before it has become paste.

Agricultural lime is the waste of lime kilns and is imperfectly burned or air slacked and needs no treatment.

Crushed lime stone is slower in action and a little more bulky, but it is cheaper.

Of agricultural lime one to five tons or more per acre would be a good dressing.

The litmus paper test is an easy one to make. The paper comes in strips in a small phial and one of the strips pressed against moist earth will soon turn red if the soil is acid.

So far as I know the only things which are injured by lime in the soil are some of the ericaceous plants such as the rhododendron. These must not have lime but all other plants are helped by it.

Timing the Rapidity of the Leading Traveling Bean Shoot

By S. Leonard Bastin



HERE are few things more strange than the means employed by the plant to get up in the world. Each member of the vegetable kingdom has but one object, and that is to secure a position above its neighbor, so that it may enjoy to the full the light and air above. Certainly the most interesting of the methods adopted by plants to get the better of one another, are those evidenced by the climbing species, amongst which the bean stands out as a particularly striking example. It is possible to conduct a most instructive series of experiments with this plant, as it is one of those accommodating species which can be easily grown to demonstrate the manner in which a typical twining plant behaves.

The seeds of the French Bean can be induced to germinate at almost any time of the year, if they are kept in a warm and moist condition. They are perhaps most quickly stirred into life by being placed in some damp moss, which is covered up so as to exclude the light. As soon as the seeds have started developing their second pair of leaflets, the small plants may be placed into suitable pots. It is well to have several specimens so as to guard against disappointment through some of the examples going wrong.

The early history of the bean is very much on the same lines as that of any other plant. At first the seedling is provided with a sturdy stem quite strong enough to maintain the plant in an upright position. When the second pair of leaves are in an advanced stage, a very remarkable change comes over the bearing of the plant. The young shoot begins to grow very rapidly, extending at a rate of several inches in the twenty-four hours. Meanwhile, the stem loses a good deal of its bearing, and becomes weak and unable to support itself in an upright posture. Now begins a very wonderful chapter in the life of the bean, and a most critical one, too. If the stem of the plant is not able to keep erect at this juncture, it will be still more difficult for it to do so later on when the growth will have extended many feet. It therefore becomes a matter of instant importance to find some support, and to this end a very surprising tendency comes into operation.

The first sign of the change in the bean is to be observed by watching the leading shoot. This will be leaning over, almost at right angles from the stem. It will be seen that the tip of the shoot does not always point in the same direction, but it is constantly changing its position. One is, in fact, witnessing the commencement of that habit of growth which is known as circumnutation. This is one of the most curious

phenomena to be seen in the plant world, and although we may realize the purpose served by the tendency, the characteristic is not very easy to explain. The most obvious change as it affects the plant, is that the stem is enabled to travel round continuously, whilst the tip of the shoot leans over as if it were searching for some object, on which it may find a hold. It is a really very impressive spectacle to watch the bean shoot sweeping round the course prescribed, at every round leaning yet further out, for at this stage the actual extension of the stem is very rapid. Nor is the moving shoot, which invariably travels from left to right, to be diverted from the course which it pursues. The influence of light on one side, so quick to affect the ordinary plant, makes not the smallest difference to the traveling bean shoot. Even if the twining portion be bound continuously in an opposite direction the result is all the same; nothing will coerce the plant or induce it to alter its course. Before this wonderful spectacle even the most deeply learned scientists are completely baffled; the secret of how the bean maintains its never ending movement being one which hitherto has not been discovered. The most that can be said is that the living matter in the plant has been endowed with an inherent tendency to twist and twine, and this instinct is handed down from one generation to another.

To see the circumnutation of the bean at its best it is necessary to have the plant in a very warm room, supposing the experiment is conducted during the winter. All these plant phenomena are carried on much more energetically when the temperature is fairly high, than in a chilly atmosphere. In the most favorable circumstances, even though one cannot quite see the shoot traveling, yet the movement is very rapid for a plant. In a particular case it was found that the shoot traversed the circle in a little over two hours, and by measuring the length of the portion of stem leaning away from the axis it was found that the circumference fell very little short of two feet. Thus it may be said that roughly the tip moved at the rate of about an inch in five minutes—a wonderful accomplishment for a vegetable. This was achieved in a moderate temperature, and during one very hot day, the pace was even accelerated so that the circle was traversed in little more than an hour and a half. Thus the circling process will be continued, each hour the revolving shoot stretching out yet farther and thus increasing the probability that it will come into contact with some object.

As soon as the circumnutation has been fully observed it is interesting to have an opportunity of seeing the behavior of the bean shoot when it comes towards a support. In a



1 P. M.



1.30 P. M.



2 P. M.



10 A. M., second day

general way twining plants are not able to rise except up an object which is nearly perpendicular, and it is a good plan to fix a straight stick or cane in an upright position for the purpose of the experiment. This should be placed to the left of the plant, a short distance away from the point last reached by the shoot in its journey round the circle. It is a singular circumstance that plants seem to be able to feel things which they are not actually touching; this tendency has often been seen in the case of roots which have turned aside from an object barring their way, some while before they have actually reached it. And we may see something which is very much like this in the bean shoot which will show signs leading one to suppose that it is almost *conscious* of the near presence of a support. Often before it is actually touching, the shoot leans over and the tip curls round ready to encircle the stick. This extreme sensitiveness is only to be noticed under the most favorable conditions when the atmosphere is very warm, and the cell contents of the plant is in the highest state of activity. In any case a very decided change comes over the bean shoot when it is actually touching. The first thing noticeable is that the shoot loops round the stick in hook fashion, so that it is safeguarded against dislodgment by rough winds. So much trouble has the plant had in finding a support, that it evidently does not mean to lose hold for want of a little care.

The development of the shoot in its new position is very rapid and one must watch the plant closely to see all the wonderful changes which now come about. Perhaps the most noticeable alteration is, that the manner of growth (from the spectator's point of view at any rate) appears to have changed. Instead of the continued wandering round and round, the shoot now grows in a spiral fashion, at first casting itself lightly about the support, then tighten-

ing up, so that it is not an easy matter to unwind it. There is still a certain amount of doubt as to whether the spiral development is not a variation of circumnutation, the change in the method of progression being perhaps induced by the rubbing of the inner side of the stem against the support. It has been suggested by Kerner that the movement may be caused by the "action of co-operating protoplasts in certain rows of cells on the circumference of the shoot." What it is that compels them to do this work he does not, of course, pretend to say. To him it is just as puzzling as the origin of the elemental stimulus that is to be found in all living things.

Given genial conditions the progression of the bean shoot up the stick now goes forward at a great pace. The whole desire of the plant seems to be to make up for the time which it lost whilst seeking round for some support. As before, everything depends upon the matter of temperature, but with warmth the growth of the shoot is surprisingly quick. It is interesting to divide the stick with marks into measured spaces so that the rate at which it mounts upwards may be definitely checked. The extension of tissue taking place as it does more rapidly during the hours of darkness, some of the most striking results will occur during the night. On a close summer evening, the shoot will extend as much as a quarter of an inch in an hour, but an average growth extending over four nights showed that the rate of progress was about two inches in the twelve hours. Day by day the development of the plant will go forward, until in the course of a few weeks the bean will have mounted many feet in height. As the plant gets older the twining stem becomes tough and fibrous so that it will be able to stand the strain of the heavy seed pods which must be produced.

Ornamental Bedding Plants for Hedges

By Ida D. Bennett



AN attractive feature of a garden or lawn is always found in a hedge of blossoming plants and it is rarely that a garden exists which does not afford an excuse for one. Usually one likes to separate the flower garden, the vegetable garden or the service part of the house from the lawn by the use of a hedge of blooming shrubbery, of evergreens or the like, but there are more exposed formal positions where something different seems required as the division line between city lots, or a hedge in a temporary home where it is not desirable to make permanent plantings but rather to have for the one season something ornamental, unusual and fine.

Fortunately there are many fine bedding plants which may be used for this purpose. It is desirable, however, that plants used in this way should possess not only fine, attractive and striking blooms, but handsome foliage as well. Fortunately many of the plants of which I shall speak possess the qualifications in a high degree.

One of the most beautiful of bedding plants is found in the Chinese Hibiscus in its various varieties. This is a hard wooded plant which in time attains considerable size. The foliage is exceedingly fine, being heavy, waxy, glossy and of a dark rich green. The flowers, which are produced in various shades of shrimp pink, rose color, rosy scarlet, orange and a variegated blossom are rarely beautiful.

H. Mineatus is much the finest of the class, being a rosy-scarlet, double flower five inches or more in diameter. This variety has the added merit of being a very free bloomer. Peach Blossom is also a very attractive double variety of large size of a delicate peach color as its name indicates. As grown in the green-house it is rather insipid but in the open ground it takes on a deeper tone which is very beautiful. The double blossoms are far more attractive than the single, though these are very handsome and the long, brush-like stamens and anthers add to the attractiveness of the flower. They are very easily grown. The best way to secure the plants is to purchase blooming plants of the florist and plant out in a sunny position in rich soil of leaf mold or muck well enriched and to give liberal culture at all times. They are quite susceptible to frost and must be wintered in a green-house or warm window.

Another wonderful plant for hedge purposes is found in the oleanders, the old-fashioned double pink which is so well known being one of the most pleasing varieties. These make in time small trees which during the summer are a mass of flowers and if not allowed to grow too tall or straggly, they are attractive in foliage at all times. They may be bedded out or grown in wooden pails or tubs sunk in the ground. Possibly, like the hibiscus, which, given too much root room is apt to run to foliage, they will bloom better for having their root room rather restricted. There are several fine varieties of the oleander seldom seen at the

north but which may readily be secured of southern florists. Among these one should make a choice of one or more of the dark red varieties such as *N. Atropurpureum pleum*, or *N. DeBrun* and with these combine the old-fashioned pink—*Splendens*, *Madam Peyre*—a double creamy-yellow variety with pink center, and *Madona Grandiflora*—the best double white. There are also several good single varieties, and if one chooses to make a collection of the various sorts it will well repay the time and money expended. Oleanders are easily propagated by rooting. Cuttings of the new wood in water in a sunny position or in wet sand with bottom heat and the plants make a quick growth. They may be wintered in a dry, light and warm cellar and brought up in the spring in time to start into growth before they are to be planted out late in May. Any good, well enriched garden soil will grow them successfully and a hedge of them in full bloom is a thing to rejoice and to be proud over.

Less rare, but still highly ornamental, the lantanas have a claim to consideration for their freedom of growth and profusion of bloom. They make very symmetrical bushes, a well developed specimen being as broad as tall and as they may be grown from small spring set plants to bushes two and three feet in diameter by midsummer, their availability as an ornamental hedge-plant is obvious. The colors range from orange and red to pink, lemon and pure white and the individual flower, though small, is borne in large clusters which completely cover the plant making it a most striking and handsome object. They should be set far enough apart in the row to assure perfect development and any good rich soil will grow them well. They should be well watered, especially after coming into bud and at this time should have liquid manure once or twice a week.

Where a low hedge eighteen or twenty inches high is desired the vincas are admirable. These plants make shapely, compact bushes nearly as wide as high and the glossy green leaves are as ornamental almost as the flowers which cover the plants in great profusion. The flowers are waxy and of good substance and occur in pure white, white with rose eye and rose colored. The plants are easily moved and at the approach of cold weather may be lifted and grown on in the house if desired. They are easily grown from spring sown seed which should be sown in the house or hot-bed early in March to insure plants of a good size for bedding out about the last of May.

Any good garden soil, well enriched will grow the vinca to perfection and it should be well watered throughout its season of growth.

The coleus may be used for low hedges and is always popular. Plants are so easily and cheaply obtainable of the florists that it hardly pays to bother to propagate them oneself, but they are one of the easiest plants to raise from cuttings and may also be raised from seed. Leaf mold suits the coleus very well, but any good garden soil will grow them to perfection and the sunnier the exposure the richer will be the color produced.

Coleus should never be allowed to bloom, but the tips of the branches should be kept nipped out and the plants be encouraged to make a stocky growth. Left to themselves they are a little inclined to grow straggly and the lower leaves to droop. For this reason they must be continually pruned and kept in subjection. If two or more tiers of leaves are nipped out each time these may be thrust in the ground about the base of the plant or around the edge of a bed it is desired to border and they will quickly take root and go on growing as though nothing had happened.

Another attractive plant rarely seen at the north is the crape myrtle. These are considered indispensable at the south and may be grown in the open ground at the north by lifting and storing them in a warm cellar in winter. They are not as handsome in foliage as the preceding plants nor do they make as symmetrical growth, but need to be trimmed into shape, but the beautiful, crape-like flowers fully compensate for all shortcomings of foliage and symmetry. There are three colors—white, pink and crimson, and all are well worth cultivating. No especial treatment is demanded; any soil which will grow good dahlias will grow this plant satisfactorily. It should be supplied with sufficient water for its needs and given, when in bloom, a little manure water.

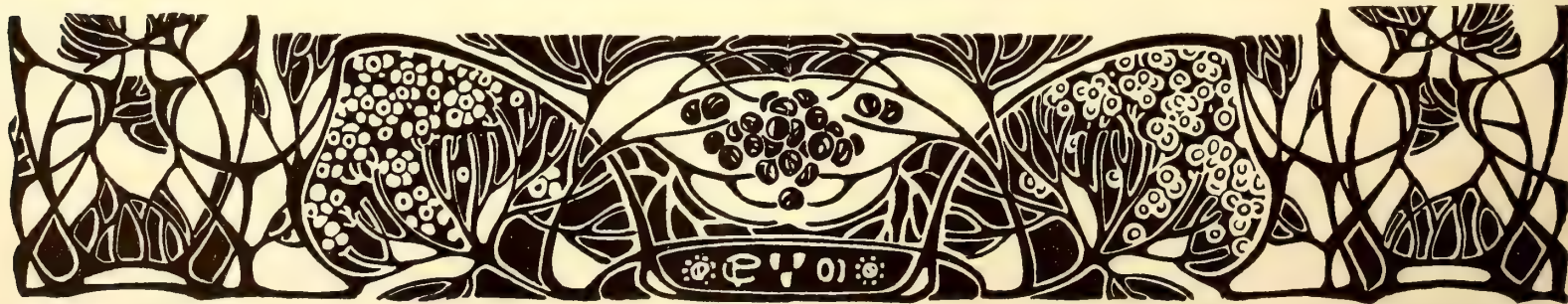
The Bougainvillea is another fine plant which, when in bloom, is a wonderful mass of rosy-crimson. The flowers, themselves, are inconspicuous white tubes but each flower is surrounded with large rosy bracts which have the effect of flowers. The plants though straggly in growth are so compact as to be easily kept in symmetrical shape. It is rather inclined to trail and for that reason is an appropriate plant for the top of walls or embankments. I like a mixture of leaf mold or peat with warm sandy loam and old, well-decayed manure for this plant. It is a hard wooded plant and in planting or potting the soil should be made very firm about the roots. It blooms from May to November, making it very desirable for bedding out. It should be lifted and stored in a warm cellar during winter.

The tender hydrangeas are among the most available plants for planting out in the summer. Unlike the hardy hydrangeas, they show attractive shades of pink and rosy red as well as white and one-*Hortensis Mariesii* changes from the light pink of the newly opened flower to a pure mauve—the blue hydrangea as it is sometimes called.

Good garden culture is all this class of plants requires. This means keeping the soil mellow and loose and not allowing the plants to suffer at any time for water.

The foliage of this class of plants is very handsome, being quite a distinct departure from that of the hardy varieties. They do somewhat better in partial shade, as too hot a sun is apt to burn the beautiful large leaves.

Then there are the Brugmansias, single and double, whose beautiful, immense white flowers resembling fluted satin, fill the evening air with perfume which reminds one somewhat of vanilla.





CORRESPONDENCE



The Editor of *American Homes and Gardens* desires to extend an invitation to all its readers to send to the Correspondence Department inquiries on any matter pertaining to the decorating and furnishing of the home and to the developing of the home grounds.

All letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this Department.

Problems in Home Furnishing

HALL FURNISHINGS

A SUBSCRIBER from Baltimore, M. D. E., asks for some ideas for furnishing her hall that will be out of the commonplace. "There is not much space, but what I get for my hall I would like to have distinctive, in a way. There seems to be nothing interesting in the halls nowadays. I need a table, a settle, a chair and a mirror. Also, a holder for an umbrella, if you can suggest anything unique."

The English furniture made of oak with cane seats stained an antique color are appropriate for a hall and have a distinctive charm. A table can also be had with a cane top. For a mirror one could have the glass selected to fit the space and then have the frame carved by hand and covered with gold leaf. Such a frame can be handsome yet extremely simple in its design. The best holder for umbrellas is one of Japanese bronze, but as this costs forty dollars, something less expensive may be necessary. In the Chinese crackled ware with a dragon design one may find something less ordinary than the Japanese blue-and-white.

SUMMER CANDLE LIGHTS

"What is there to use in a city home that is kept open during the summer months in the way of table lighting? In the winter I have the silver candlesticks and metal shades, but these seem unseasonable during the warm weather."—G. F.

The glass shades made in square columns are attractive for summer use. These can be fitted with shades made of parchment and with a pattern stencilled on them, or, a pattern may be cut out from the parchment and filled with a contrasting color. Some of the prettiest shades are of thin metal imitating silver with pine needle design cut out, showing the pink or yellow lining underneath. These shades cost a dollar each. The linings cost sixty cents each and are protected with isinglass.

A YOUNG MAN'S SUITE OF ROOMS

A mother whose son is returning from college writes about fitting up his rooms. "My son has not been home to stay for four years and now that he is to be with us again we have arranged a little suite of rooms, bath, bedroom and study, which can be made very attractive, I think. The bedroom faces the south, but has only one window. The study faces the east with one window. What would you paper these rooms with, and how would you fit up the windows. Also, please suggest rugs and furniture that are up to date and suitable."—T. F., Toledo, Ohio.

The bedroom may have a single mahogany bed with slender four-posts and rail across the foot. A chiffonier with a glass, a side chair and a slipper chair would be needed. Also a table at the side of the bed with a night light. If the bed stands out from the wall a rug could be laid on each side, with a larger one at the foot. The plain color Scotch rugs would be suitable

in this room, choosing those that would harmonize with the wall-paper. One of the English chintz papers in stripes and strings of flowers would be attractive, with over curtains of cretonne. The latter could also be used as a cover for the bed. Muslin curtains looped back could be hung under the chintz curtains, and hemstitched linens laid on the table and chiffonier.

In the study with the eastern outlook a buff paper in texture effect would be pleasing, with long over curtains of printed linen. A writing table or desk with a chair, a lounge, two arm chairs and a small table could be the furnishings to start with until the needs of the occupant were defined by living a while in the room. If there is a fireplace it could be fitted with a pair of quaint andirons and firepieces.

FITTING UP A KITCHEN

The proper fitting up of a kitchen is now considered an important part of the home maker's duties, and expert advice is often given for this department. A bride inquires as to the cost of the complete outfit for such a room.

The following list would cost about fifty dollars, but every article is not essential in starting to keep house. From this list certain articles could be eliminated until actually required for use. Table, chair, step chair, pastry board, bread board, knife board, pail, flour sifter, coffee mill, towel roller, potato masher, wood spoon, rolling pin, knife box, meat chopper, carpet sweeper, salt box, broom, steak broiler, toaster, frying basket and pan, scoop, gravy strainer, tea strainer, coffee strainer, jelly cake pans, pie pans, muffin pan, angel cake pan, roasting pan, griddle, biscuit pan, bread and cake mixer, quart measure, egg beater, paring knife, cake turner, lemon squeezer, corkscrew, can opener, basting spoon, dipper, dish, pan, ladle, skimmer, agate sauce pans, rice boiler, soup pot, tea kettle, coffee pot, bread box, cake box, spice set, flour canister, sugar canister, tea canister, coffee, oatmeal and rice canister, brown china tea pot, clay casserole, butter crock, yellow bowls, pot chain, floor cloth, dish cloths, chamois skin, dusters, scrub brush, silver brush, dust brush, dust pan, pastry brush.

WHAT KIND OF A FOOT REST?

A masculine reader of the magazine asks for information on some kind of a foot rest that he can use in the living-room? The ordinary foot stool he finds is agreeable to look at but not high enough for real comfort.

A mahogany foot rest covered with padding and velvet is made for this special use, but it is not an object of beauty and the cost is considerable. In a home where several of the men of the household enjoy smoking and reading after dinner, the foot rest question has been settled by using camp stools covered to match the furniture. These are folded away into the hall closet and brought out when really put into use. They have been found convenient, inexpensive and comfortable.

Garden Work About the Home

SEWAGE DISPOSAL ON A SMALL PLACE

A correspondent has submitted for our approval the following scheme for disposing of the sewage on his small country place. The whole scheme seems so admirable and is worked out with such care of detail that we publish it in full as a suggestion to other of our readers who may have similar problems.

"When we bought our house twenty years ago the only plumbing was a pump at the kitchen sink which drew water from a cistern. Since then we have added two bathrooms, a laundry, kitchen sink and pantry, all with hot and cold water.

The water is pumped from a well driven partly in the rock and 100 feet deep. It is on the lowest part of our acre place, just where it seems most likely that sewage would seep in from an ordinary cesspool. The place is so small and the land available for a disposal field for the effluent from a septic tank is so limited that we have had to devise a special system.

Because the plumbing was put in gradually it was easy to separate the waste, so we have one soil pipe connected with the water closets and another connected with the bath tubs, laundry, sinks and hand basins.

The pipe from the water closets goes to a small septic tank which discharges as we wish into a gridiron of pipes laid eighteen inches deep in the asparagus bed, or into another under the rose bed, or to a third about some small pear trees. The operation of the septic tank is automatic. All the attention it requires is turning the valve once a week so that each field receives the effluent for one week and rests for two weeks.

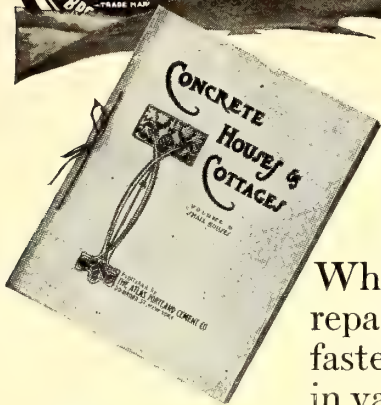
We have a wonderful asparagus bed, and the roses and pear trees flourish in the driest weather.

From the tubs and sinks the water goes to a large water-tight tank or cesspool, which is piped to the garden so that in dry times the garden can be irrigated. The pipe laid on top of the ground connects with a pipe running across the ends of the rows in the garden, and this cross-pipe has holes in it at regular intervals so that the water will run in and fill the trenches between the rows. There is also a connection for a hose to use in watering the flower garden.

For fear the quantity of water might be too great to use in the garden in a wet season, we have provided a blind drain or ditch filled with stones, into which the cesspool can be emptied.

It is a rather complicated system but so far works very well. Every drop of water is used twice and in the worst droughts our garden is luxuriant. How it would work in winter we do not know, as we use the place only six months in the summer.

It is absolutely inoffensive and unobjectionable and the extra trouble is well worth while if one has a small water supply and is interested in gardening.



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CANNING AND PRESERVING FRUIT

HINTS FOR THE HOUSEWIFE—III*

By Marie Parloa

Continued from HOMES AND GARDENS, June, No. 6, page xvi.

CANNING FRUIT.

Canned Fruit Cooked in a Water Bath.

Prepare the fruit and syrup as for the cooking in the oven.

Fill the sterilized jars and put the covers on loosely. Have a wooden rack in the bottom of a wash boiler. Put in enough warm water to come to about four inches above the rack. Place the filled jars in the boiler, but do not let them touch one another. Pack clean white cotton rags, or perhaps better, cotton rope, between and around the jars to prevent them from striking one another when the water begins to boil. Cover the boiler and let the fruit cook ten minutes from the time the water surrounding it begins to boil.

Draw the boiler back and take off the cover. When the steam passes off take out one jar at a time and place in a pan of boiling water beside the boiler, fill up with boiling syrup, and seal. Put the jars on a board and do not let cold air blow upon them. If screw covers are used tighten them when the glass has cooled and contracted.

Preserving Fruit.

In the case of most fruits, canning with a little sugar is to be preferred to preserving with a large quantity of sugar. There are, however, some fruits that are only good when preserved with a good deal of sugar. Of course such preparations of fruit are only desirable for occasional use. The fruits best adapted for preserving are strawberries, sour cherries, sour plums, and quinces. Such rich preparations should be put up in small jars or tumblers.

Strawberries.

Use equal weights of sugar and strawberries. Put the strawberries in the preserving kettle in layers, sprinkling sugar over each layer. The fruit and sugar should not be more than four inches deep. Place the kettle on the stove and heat the fruit and sugar slowly to the boiling point. When it begins to boil skim carefully. Boil ten minutes, counting from the time the fruit begins to bubble. Pour the cooked fruit into platters, having it about three inches deep. Place the platters in a sunny window, and in an unused room, for three or four days. In that time the fruit will grow plump and firm, and the syrup will thicken almost to a jelly. Put this preserve, cold, into jars or tumblers.

White Currants.

Select large, firm fruit, remove the stems, and proceed as for strawberries.

Cherries.

The sour cherries, such as Early Richmond and Montmorency, are best for this preserve. Remove the stems and stones from the cherries and proceed as for strawberry preserve.

Cherries Preserved with Currant Juice

12 quarts of cherries.
3 quarts of currants.
2 quarts of sugar.

Put the currants in the preserving kettle and on the fire. When they boil crush them and strain through cheese cloth, pressing out all the juice.

Stem and stone the cherries, being careful.

(Continued on page xiv)

* Reprint of Farmers' Bulletin 203, issued by the Department of Agriculture.

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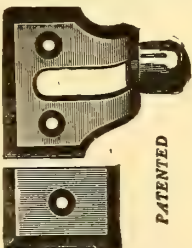
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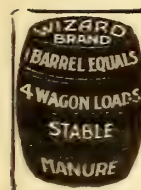


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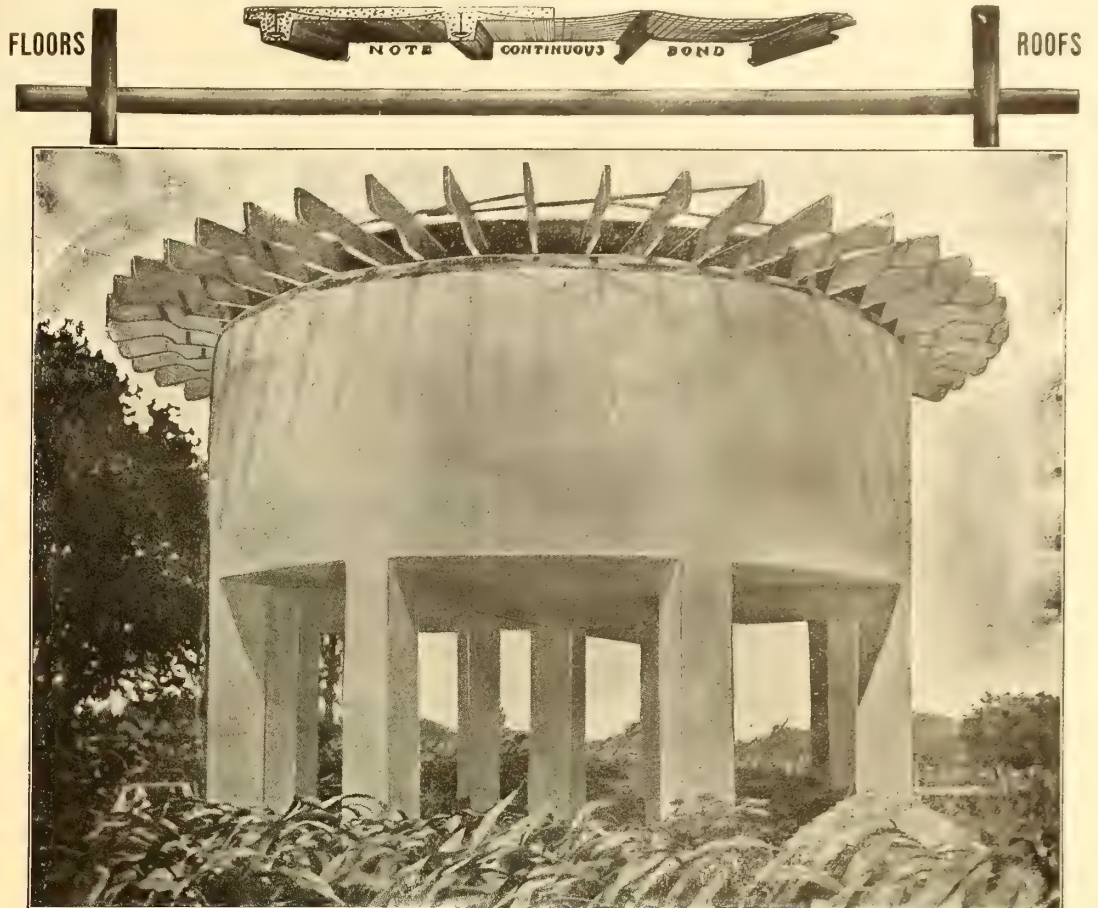
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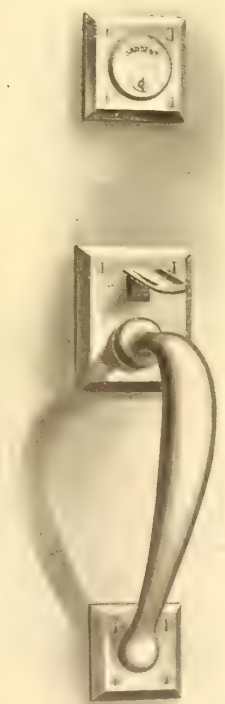
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ful to save all the juice. Put the cherries, fruit juice, and sugar in the preserving kettle. Heat to the boiling point and skim carefully. Boil for twenty minutes. Put in sterilized jars or tumblers. This gives an acid preserve. The sugar may be doubled if richer preserves are desired.

Plum Preserve.

4 quarts of green gages.
2 quarts of sugar.
1 pint of water.

Prick the fruit and put it in a preserving kettle. Cover generously with cold water. Heat to the boiling point and boil gently for five minutes. Drain well.

Put the sugar and water in a preserving kettle and stir over the fire until the sugar is dissolved. Boil five minutes, skimming well. Put the drained green gages in this syrup and cook gently for twenty minutes. Put in sterilized jars.

Other plums may be preserved in the same manner. The skins should be removed from white plums.

Quinces.

4 quarts of pared, quartered, and cored quinces.
2 quarts of sugar.
1 quart of water.

Boil the fruit in clear water until it is tender, then skim out and drain.

Put two quarts of sugar and one quart of water in the preserving kettle; stir until the sugar is dissolved. Let it heat slowly to the boiling point. Skim well and boil for twenty minutes. Pour one-half of the syrup into a second kettle. Put one-half of the cooked and drained fruit into each kettle. Simmer gently for half an hour, then put in sterilized jars. The water in which the fruit was boiled can be used with the parings, cores, and gnarly fruit to make jelly.

Fruit Purées.

Purées of fruit are in the nature of marmalades, but they are not cooked so long, and so retain more of the natural flavor of the fruit. This is a particularly nice way to preserve the small, seedy fruits, which are to be used in puddings, cake, and frozen desserts.

Free the fruit from leaves, stems, and decayed portions. Peaches and plums should have the skins and stones removed. Rub the fruit through a purée sieve. To each quart of the strained fruit add a pint of sugar. Pack in sterilized jars. Put the covers loosely on the jars. Place the jars on the rack in the boiler. Pour in enough cold water to come half way up the sides of the jars. Heat gradually to the boiling point and boil thirty minutes, counting from the time when the water begins to bubble.

Have some boiling syrup ready. As each jar is taken from the boiler put it in a pan of hot water and fill up with the hot syrup. Seal at once.

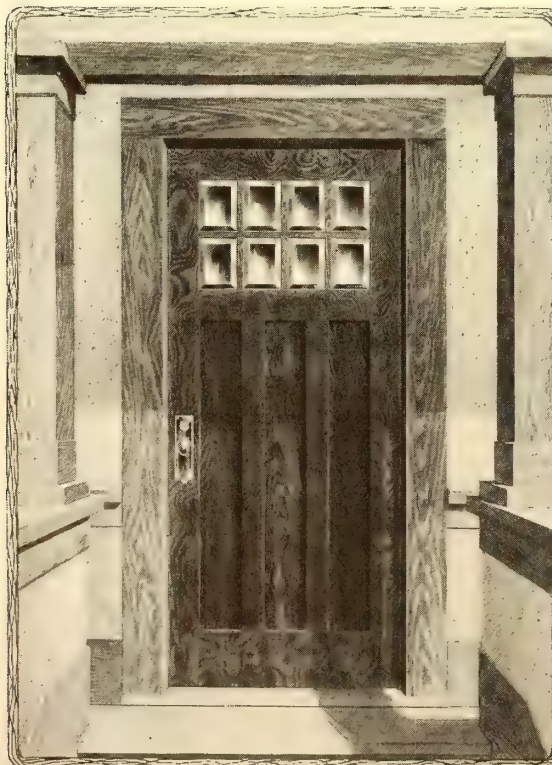
Marmalades.

Marmalades require great care while cooking because no moisture is added to the fruit and sugar. If the marmalade is made from berries the fruit should be rubbed through a sieve to remove the seeds. If large fruit is used have it washed, pared, cored, and quartered.

Measure the fruit and sugar, allowing one pint of sugar to each quart of fruit.

Rinse the preserving kettle with cold water that there may be a slight coat of moisture on the sides and the bottom. Put alternate layers of fruit and sugar in the kettle, having the first layer fruit. Heat slowly, stirring frequently. While stirring, break up the fruit as much as possible. Cook about two hours, then put in small sterilized jars.

(Continued on page xvi)



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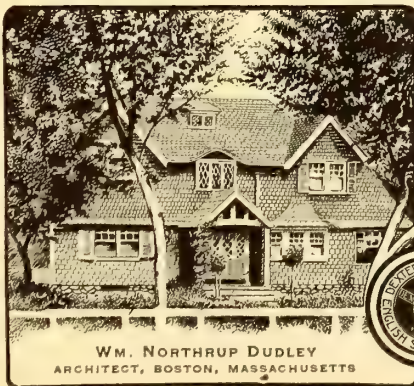


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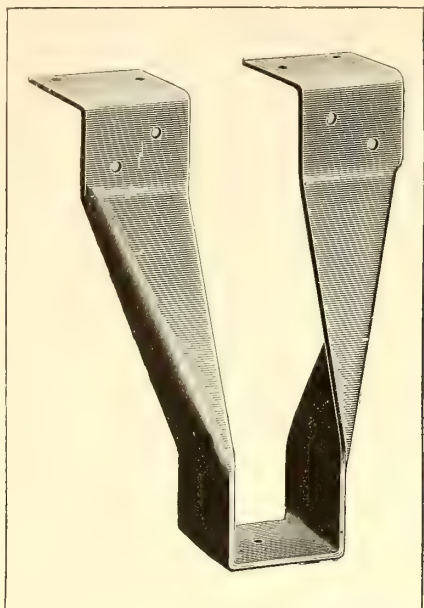
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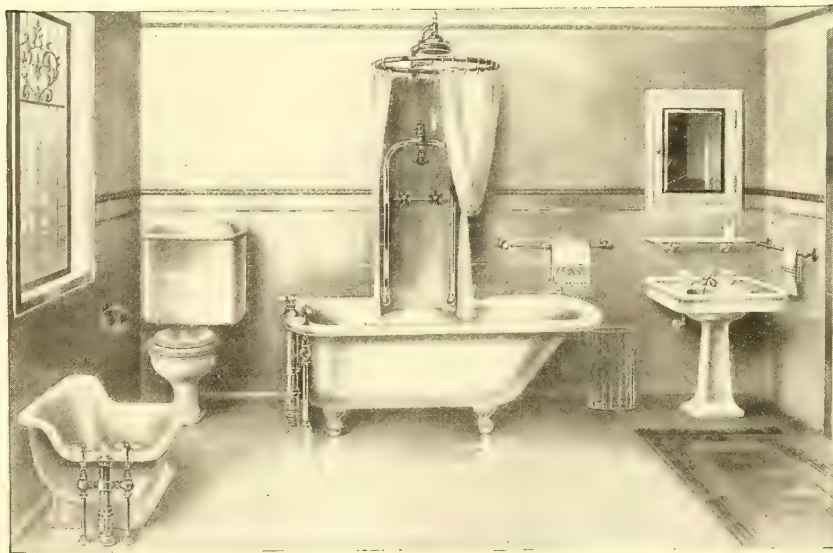
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Boil six quarts of grape juice in an open preserving kettle, until it is reduced to four quarts. Have the fruit washed and pared, and, if apples or pears, quartered and cored. Put the prepared fruit in a preserving kettle and cover generously with the boiled grape juice. Boil gently until the fruit is clear and tender, then put in sterilized jars.

Boiled Cider.

When the apple crop is abundant and a large quantity of cider is made, the housekeeper will find it to her advantage to put up a generous supply of boiled cider. Such cider greatly improves mince meat, and can be used at any time of the year to make cider apple sauce. It is also a good selling article.

The cider for boiling must be perfectly fresh and sweet. Put it in a large, open preserving kettle and boil until it is reduced one-half. Skim frequently while boiling. Do not have the kettle more than two-thirds full.

Put in bottles or stone jugs.

Cider Apple Sauce.

5 quarts of boiled cider.

8 quarts of pared, quartered, and cored sweet apples.

Put the fruit in a large preserving kettle and cover with the boiled cider. Cook slowly until the apples are clear and tender. To prevent burning, place the kettle on an iron tripod or ring. It will require from two to three hours to cook the apples. If you find it necessary to stir the sauce be careful to break the apples as little as possible. When the sauce is cooked, put in sterilized jars.

In the late spring, when cooking apples have lost much of their flavor and acidity, an appetizing sauce may be made by stewing them with diluted boiled cider, using one cupful of cider to three of water.

Cider Pear Sauce.

Cooking pears may be preserved in boiled cider the same as sweet apples. If one prefers the sauce less sour, one pint of sugar may be added to each quart of boiled cider.

Methods of Making Jelly.

In no department of preserving does the housekeeper feel less sure of the result than in jelly making. The rule that works perfectly one time fails another time. Why this is so the average housekeeper does not know; so there is nearly always an element of uncertainty as to the result of the work. These two questions are being constantly asked: "Why does not my jelly harden?" "What causes my jelly to candy?"

It is an easy matter to say that there is something in the condition of the fruit, or that the fruit juice and sugar were cooked too short or too long a time. These explanations are often true; but they do not help the inquirer, since at other times just that proportion of sugar and time of cooking have given perfect jelly. Herewith an attempt is made to give a clear explanation of the principles underlying the process of jelly making. It is believed that the women who study this carefully will find the key to unvarying success in this branch of preserving.

(To be Continued.)

Concrete Reinforced Concrete and Concrete Building Blocks

Scientific American Supplement 1543 contains an article on concrete, by Brysson Cunningham. The article clearly describes the proper composition and mixture of concrete and gives results of elaborate tests.

Scientific American Supplement 1538 gives the proportion of gravel and sand to be used in concrete.

Scientific American Supplements 1567, 1568, 1569, 1570, and 1571 contain an elaborate discussion by Lieut. Henry J. Jones of the various systems of reinforcing concrete, concrete construction, and their applications. These articles constitute a splendid text book on the subject of reinforced concrete. Nothing better has been published.

Scientific American Supplement 997 contains an article by Spencer Newberry in which practical notes on the proper preparation of concrete are given.

Scientific American Supplements 1568 and 1569 present a helpful account of the making of concrete blocks by Spencer Newberry.

Scientific American Supplement 1534 gives a critical review of the engineering value of reinforced concrete.

Scientific American Supplements 1547 and 1548 give a resume in which the various systems of reinforced concrete construction are discussed and illustrated.

Scientific American Supplement 1564 contains an article by Lewis A. Hicks, in which the merits and defects of reinforced concrete are analyzed.

Scientific American Supplement 1551 contains the principles of reinforced concrete with some practical illustrations by Walter Loring Webb.

Scientific American Supplement 1573 contains an article by Louis H. Gibson on the principles of success in concrete block manufacture, illustrated.

Scientific American Supplement 1574 discusses steel for reinforced concrete.

Scientific American Supplements 1575, 1576, and 1577 contain a paper by Philip L. Wormler, Jr. on cement, mortar and concrete, their preparation and use for farm purposes. The paper exhaustively discusses the making of mortar and concrete, depositing of concrete, facing concrete, wood forms, concrete sidewalks, details of construction of reinforced concrete posts.

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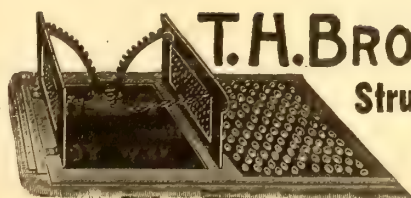
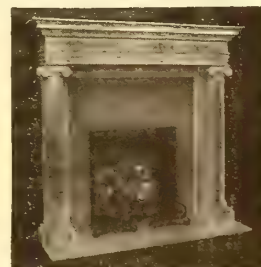
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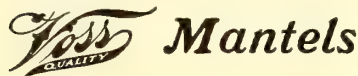
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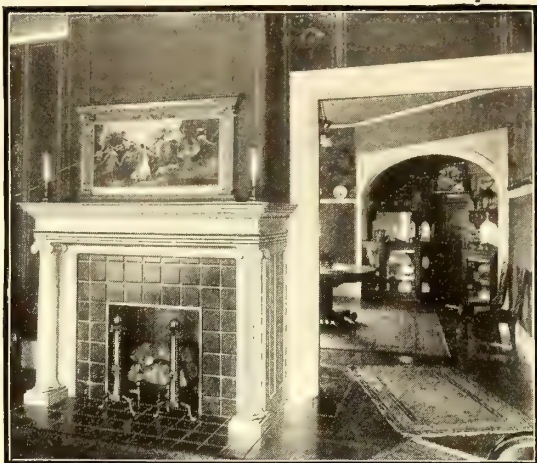
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BOOK REVIEWS

PRODUCER GAS FIRED FURNACES. By Oskar Nagel, Ph.D. New York: Published by the Author, 1909. 8vo.; 192 pp.; 237 illustrations. Price, \$2 net.

More energy can be obtained from coal when used in a producer gas plant than in any other way. The increasing interest in this method of utilizing the energy of coal should make the present work of particular interest. The book gives detailed descriptions and practical illustrations of all kinds of gas fired furnaces and describes actual installations of furnaces used in chemical, metallurgical, iron, steel, lime, cement, glass, brick, and ceramic industries.

PRACTICAL ENGINEER POCKET BOOK FOR 1910. London: The Technical Publishing Company, Ltd., 16mo.; 684 pp. Cloth, price 1s. net; leather, gilt, with diary or ruled section paper, 1s. 6d. net; postage 3d. extra. Price, 60 cents.

We have reviewed various editions of this book for a number of years, and have found that the information conveyed was reliable and is presented in such form as to be very readily available. The excellent indexes are to be particularly commended.

THE ART OF THE BELGIAN GALLERIES. By Esther Singleton. Boston: L. C. Page & Co., 1909. 12mo.; 369 pp. 48 plates. Price, \$2.

The author has produced a most readable book, which will be valuable to the visitor to the galleries of Antwerp, Brussels, and Bruges. The book is intended for a help to the student in tracing the course of Flemish art by the notable pictures to be found in the Belgian galleries. The introductory part contains short biographies of the chief masters whose works are contained in the galleries, and descriptive matter relative to their places in the course of Flemish art, together with some description of their individual art and their influence on others. In describing the art of the individual galleries, the general plan has been to deal first with the masterpieces of the collection and the works of the greatest masters, grouping the latter irrespective of subject. The illustrations are admirably selected, and are beautifully reproduced in warm sepia tones. In comparing this volume with the preceding one on “The Art of the Netherlands Galleries,” the effect of religion on the development of the schools is very marked; for while the Protestant Dutch were painting portraits or scenes of domestic life, as well as landscapes, the Roman Catholic Flemings were still painting large pictures of religious subjects in the old spirit of devotion. Now that the whole world is turning with more and more interest to old Dutch and Flemish pictures, this volume will prove of great interest.

CHATS ON OLD SILVER. By E. L. Lowes. New York: Frederick A. Stokes Company, 1909. 12mo.; 320 pp. Price, \$2.

This sumptuous book is freely illustrated by 54 full-page illustrations and numerous line drawings in the text. There is also a colored frontispiece. The subject is a most fascinating one, for among all the objects of fine art which the amateur collects, there is nothing which is so easy to acquire and so satisfactory as old silver. Fine furniture, choice prints, and goodly pictures are objects greatly sought after, but they must be fine and bear the outward and visible sign of some master hand to be worth collecting. They have also to bear the constant risk of deterioration, to withstand the continued fluctuations of taste, and consequent rise and fall of the market; where-

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Noteworthy Articles ON TIMELY TOPICS

SEWAGE AND ITS DISPOSAL. A review of modern methods. By H. Lemmoin-Cannon. *Scientific American Supplement* 1551.

ELECTRIC LIGHTING FOR AMATEURS. How a small and simple experimental installation can be set up at home. *Scientific American Supplement* 1551.

CHEMICAL AFFINITY. Simply explained by Sir Oliver Lodge. *Scientific American Supplement* 1547.

CASE-HARDENING. By David Flather. *Scientific American Supplement* 1547.

ELECTRIC IGNITION SYSTEMS. A comprehensive article by E. W. Roberts. *Scientific American Supplement* 1546.

CONCRETE. A general article on its merits and defects. *Scientific American Supplement* 1543.

REINFORCED CONCRETE. Some of its Principles and Applications with practical Illustrations. *Scientific American Supplements* 1547, 1548, 1551.

ELECTRONS AND THE ELECTRONIC THEORY are discussed by Sir Oliver Lodge in *Scientific American Supplements* 1428, 1429, 1430, 1431, 1432, 1433, 1434.

WIRELESS TELEGRAPHY. Its Progress and Present Condition are well discussed in *Scientific American Supplements* 1425, 1426, 1427, 1386, 1388, 1389, 1383, 1381, 1327, 1328, 1329, 1431.

HOW TO CONSTRUCT AN EFFICIENT WIRELESS TELEGRAPH APPARATUS AT SMALL COST is told in *Scientific American Supplement* 1363.

SELENIUM AND ITS REMARKABLE PROPERTIES are fully described in *Scientific American Supplement* 1430. The paper is illustrated by numerous engravings.

LANGLEY'S AERODROME. Fully described and illustrated in *Scientific American Supplements* 1404, 1405 and 1546.

STEAM TURBINES. Their Construction, Operation and Commercial Application. *Scientific American Supplements* 1306, 1307, 1308, 1422, 1400, 1447, 1370, 1372, 1521. The articles have all been prepared by experts in steam engineering.

PORTLAND CEMENT MAKING is described in excellent articles contained in *Scientific American Supplements* 1433, 1465, 1466, 1510, 1511.

THE TANTALUM LAMP. A full illustrated description of a lamp having a metallic filament and burning at once without preliminary heating appears in *Scientific American Supplement* 1523.

THE WATERPROOFING OF FABRICS is thoroughly discussed in *Scientific American Supplement* 1522 by an expert.

THE SPARK COIL, ITS CONSTRUCTION AND MAINTENANCE, is the subject of a painstaking article in *Scientific American Supplement* 1522.

ELECTRIC IGNITERS FOR GAS ENGINES are discussed in *Scientific American Supplement* 1514.

CARBURETERS, a subject of immense importance to automobilists and the users of oil engines, is well treated in *Scientific American Supplement* 1508.

EPICYCLIC TRAINS, which play an important part in toothed gearing, are ably described in *Scientific American Supplement* 1524.

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CHATS ON OLD EARTHENWARE. By Arthur Hayden. New York: Frederick A. Stokes Company, 1909. 12mo.; pp. 496. Price, \$2.

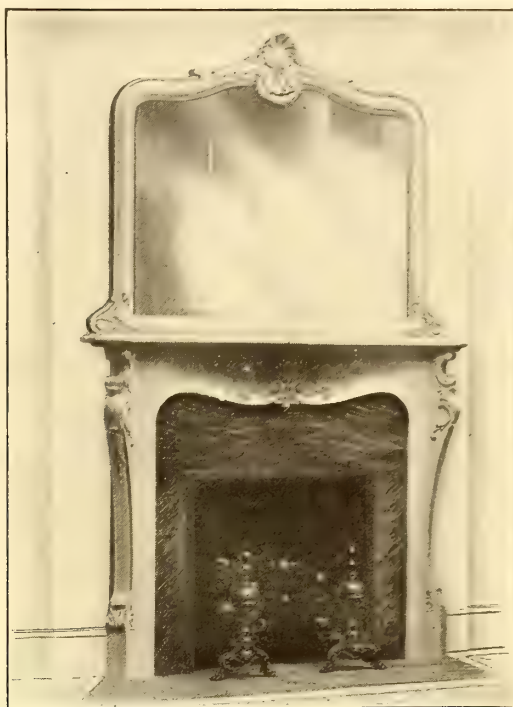
This beautiful book is accompanied by 150 illustrations and tables of over 200 illustrated marks. Five years ago the author published "Chats on English Silver" which was warmly received. A great number of readers wrote to the author suggesting that he should write a companion volume dealing with old English earthenware. The collection of old English earthenware, in the main, is still within the reach of those who have slender purses, while English china within the last decade has reached prohibitive prices. After a bibliographical sketch, comes a glossary, then a chapter on "How to Collect, for Beginners," which is extremely valuable. This is followed by chapters on Early Ware; English Delft; Stoneware; Early Staffordshire Ware; Slate Glazed Ware; Josiah Wedgwood, Leeds, and other factories; Transfer Printed Ware; Staffordshire Figures; Swansea and other factories; Lustre Ware; and Late Staffordshire Ware. There are valuable lists of prices appended to every chapter. The book is very handsomely made and is sure to merit the attention of all collectors.

MODERN LETTERING, ARTISTIC AND PRACTICAL. By William Heyny. New York: William T. Comstock, 1909. 8vo.; 136 pp. Price, \$2.

This is a book of instruction primarily valuable in the hands of the beginner and of assistance to the experienced workman. "Modern Lettering" essays the subject from the practical standpoint from cover to cover. The author, a man of experience and of artistic temperament, boldly sets forth his ideas and propounds his methods in concise language. Directions even to minute details are given, all of which are valuable to the student. The plates are all on a large scale and the letters are clear and sharp. The French Roman is a new letter in this country, and will be appreciated for its refinement, beauty and legibility.

POWER, HEATING AND VENTILATION. A Treatise for Designing and Constructing Engineers, Architects and Students. By Charles L. Hubbard. B.S., M.E. Part III. Heating and Ventilation. First edition. Brattleboro, Vt.: The Technical Press, 1909. 8vo.; pp. 647. Price, \$2.

This is a very practical book dealing with all phases of warming and ventilation. Even such subjects as electrical heating are taken up. The illustrations are excellent, the expensive but eminently successful wax process being used. The tables are also of great value. The subject is treated with rare discrimination, and the book cannot help but be of great use to all engineers.



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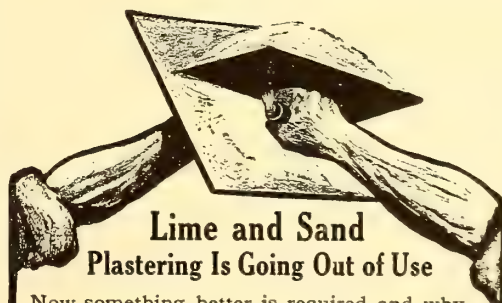
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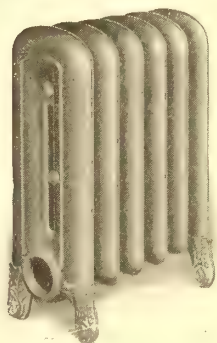
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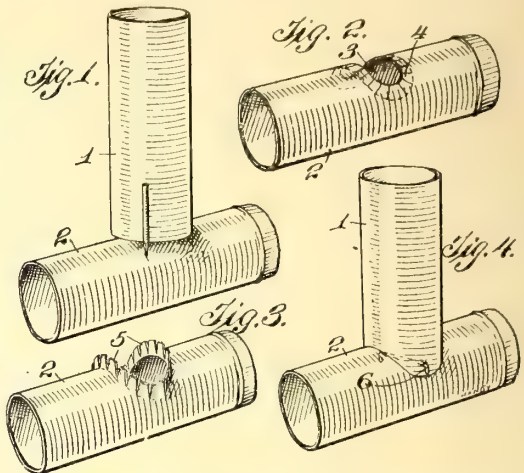


HOW TO CONNECT STOVE PIPES

By H. G. L.

THE man who desires to connect two stove pipes together and has not the tools ordinarily used for this purpose can do the work as follows:

Place one end of pipe 1 against the side of the pipe 2 at the point where it is to be connected. With pencil flat against the side of pipe 1, as in Fig. 1, trace off the curve on pipe 2. Leaving about 1 inch margin, cut out a disk 3, slit the margin back to the line as at 4, and turn up the tangs 5. Force the end of pipe 1 through



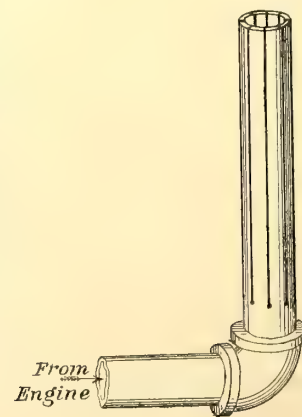
the opening, and trace off the curve of pipe 2. Withdraw pipe 1, and cut off the end as marked. Now fit the pipe 1 into place with the tangs 5 on the inside, and bend the tangs up to a tight fit. If carefully executed, the joint will be sufficiently tight for all purposes.

To hold the pipes rigidly together, punch small holes through the opposite sides with a sharp punch, and put in a piece of stiff wire 6. Bend the ends of the wire on the outside. The wire should pass through the tangs on the inside.

A MUFFLER FOR GAS ENGINES

By Alfred P. Morgan.

THE handy man who has a gasoline engine in his shop and which exhausts outside into the atmosphere may silence that disturber of the peace somewhat in the manner shown in the accompanying illustration. It removes the sharp penetrating quality of the noise without causing any back pressure. The end of the exhaust pipe, which must be vertical in order to prevent clattering of the segments,



is split into eight parts by means of longitudinal cuts made with a hack-saw. The cuts should extend for three or four feet in the pipe.

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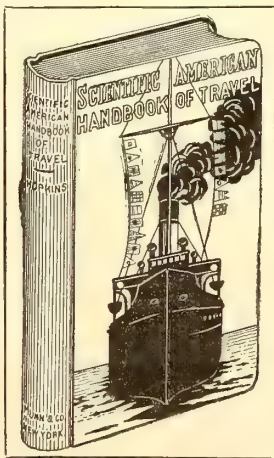
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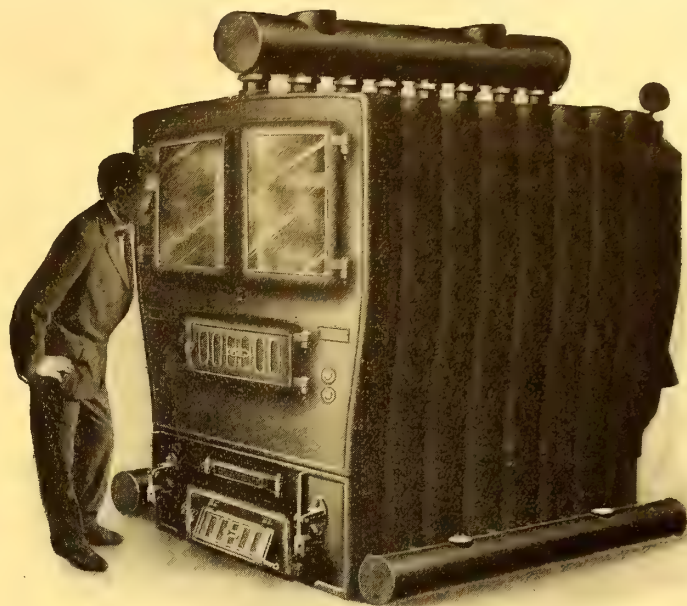


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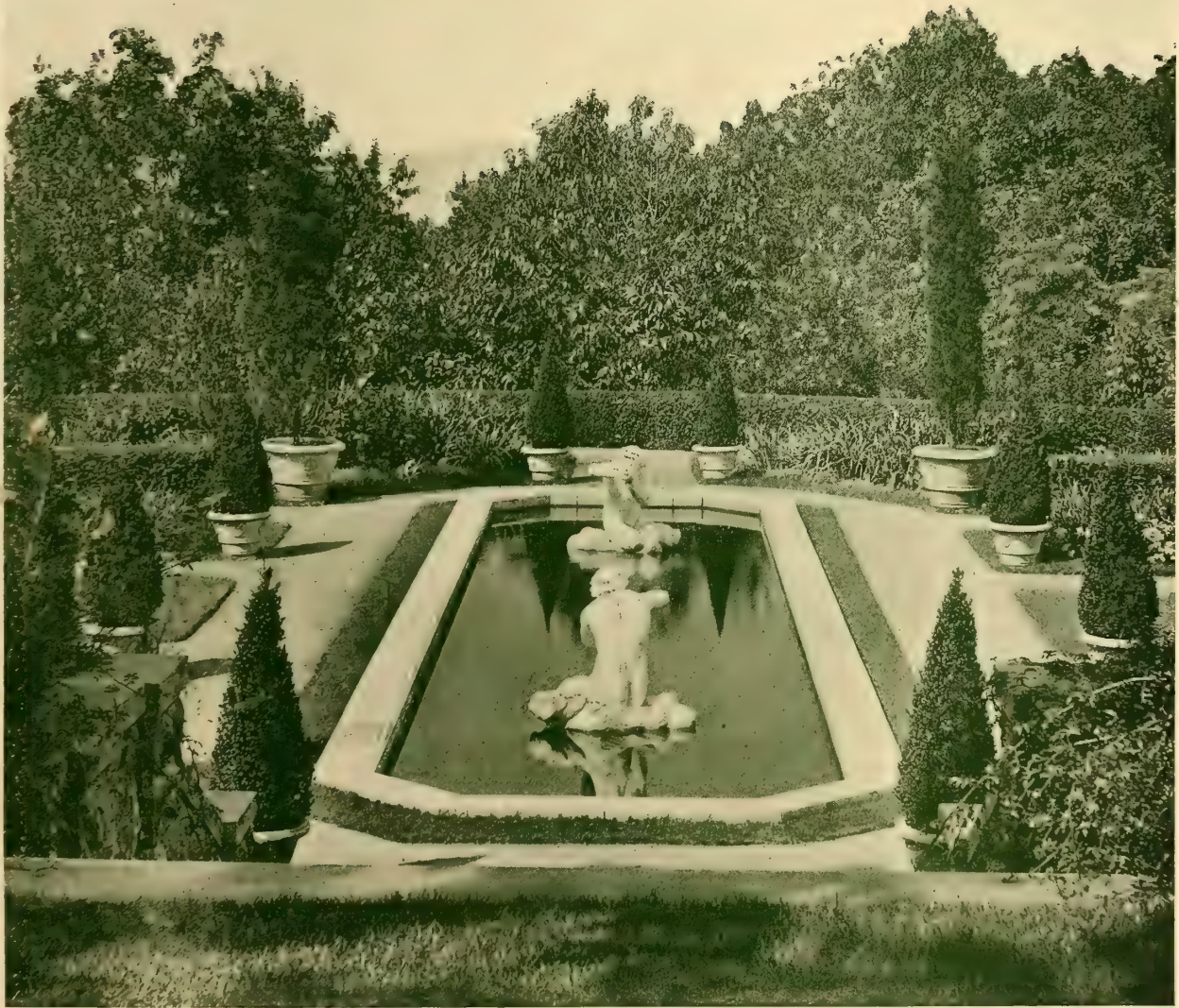
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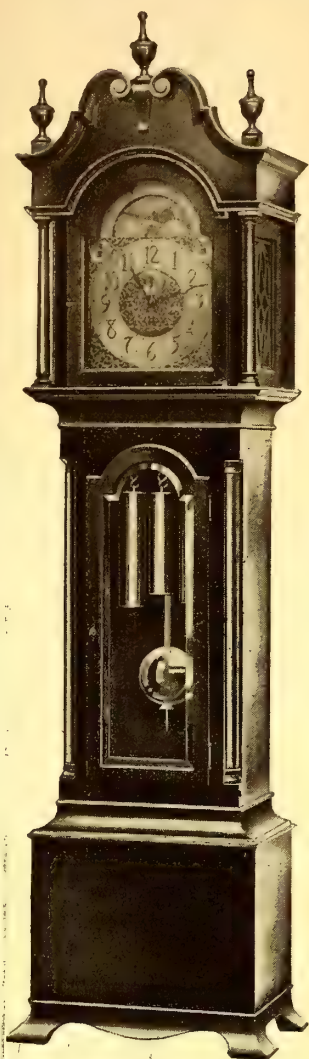
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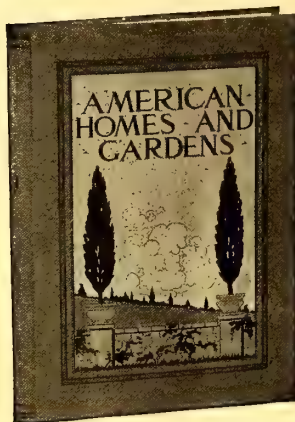
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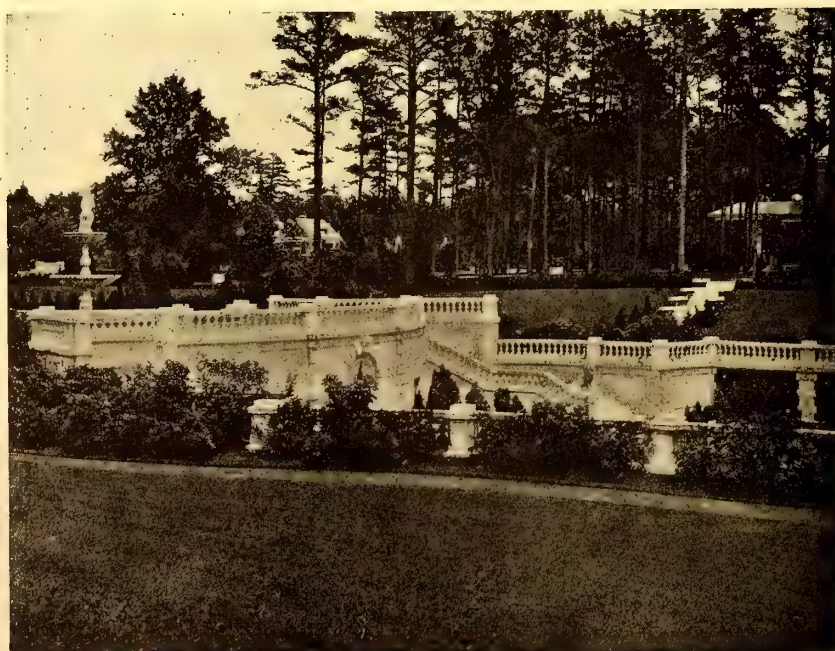
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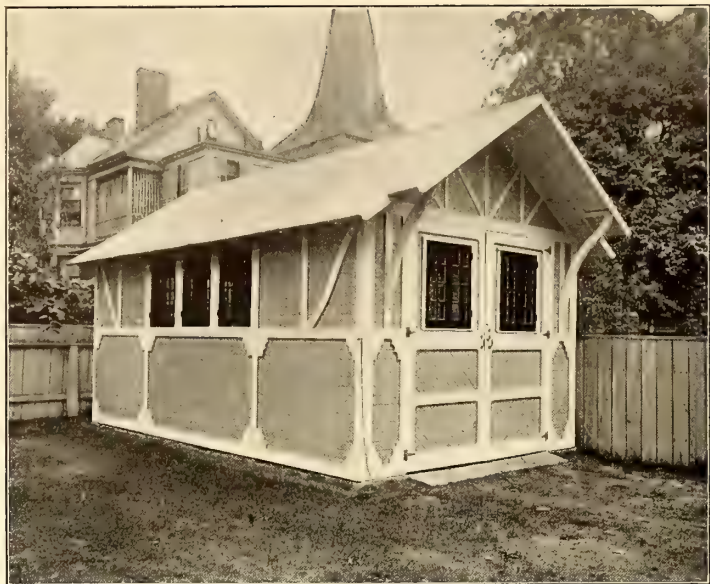
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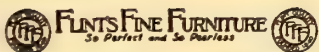
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CANNING AND PRESERVING FRUIT

HINTS FOR THE HOUSEWIFE—IV*

By Marie Parloa

Continued from HOMES AND GARDENS,
July, No. 7, page xvi.

Selection and Handling of Fruit for Jelly Making.

An acid fruit is the most suitable for jelly making, though in some of the acid fruits, the strawberry, for example, the quantity of the jelly-making pectin is so small that it is difficult to make jelly with this fruit. If, however, some currant juice be added to the strawberry juice, a pleasant jelly will be the result; yet, of course, the flavor of the strawberry will be modified. Here is a list of the most desirable fruits for jelly making. The very best are given first: Currant, crab apple, apple, quince, grape, blackberry, raspberry, peach.

Apples make a very mild jelly, and it may be flavored with fruits, flowers, or spices. If the apples are acid it is not advisable to use any flavor.

Juicy fruits, such as currants, raspberries, etc., should not be gathered after a rain, for they will have absorbed so much water as to make it difficult, without excessive boiling, to get the juice to jelly.

If berries are sandy or dusty it will be necessary to wash them, but the work should be done very quickly so that the fruit may not absorb much water.

Large fruits, such as apples, peaches, and pears, must be boiled in water until soft. The strained liquid will contain the flavoring matter and pectin.

It requires more work and skill to make jellies from the fruits to which water must be added than from juicy fruits. If the juicy fruits are gathered at the proper time one may be nearly sure that they contain the right proportion of water. If gathered after a rain the fruit must be boiled a little longer so that the superfluous water may pass off in steam.

In the case of the large fruits a fair estimate is three quarts of strained juice from eight quarts of fruit and about four quarts of water. If the quantity of juice is greater than this it should be boiled down to three quarts.

Apples will always require four quarts of water to eight quarts of fruit, but juicy peaches and plums will require only three or three and a half quarts.

The jelly will be clearer and finer if the fruit is simmered gently and not stirred during the cooking.

It is always best to strain the juice first through cheese cloth and without pressure. If the cloth is double, the juice will be quite clear. When a very clear jelly is desired the strained juice should pass through a flannel or felt bag. The juice may be pressed from the fruit left in the strainer and used in marmalade or for a second-quality jelly.

To make jelly that will not crystalize (candy) the right proportion of sugar must be added to the fruit juice. If the fruit contains a high percentage of sugar, the quantity of added sugar should be a little less than the quantity of fruit juice. That is to say, in a season when there has been a great deal of heat and sunshine there will be more sugar in the fruit than in a cold, wet season; consequently, one pint of currant juice will require about three-quarters

(Continued on page x)

* Reprint of Farmers' Bulletin 203, issued by the Department of Agriculture.

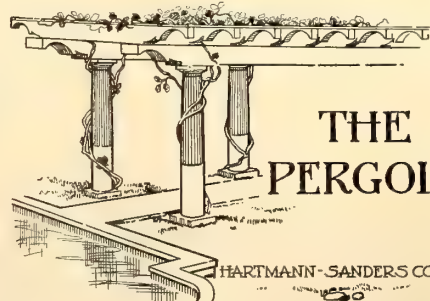
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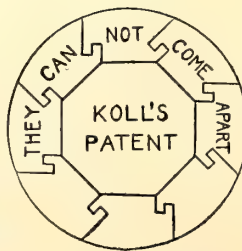
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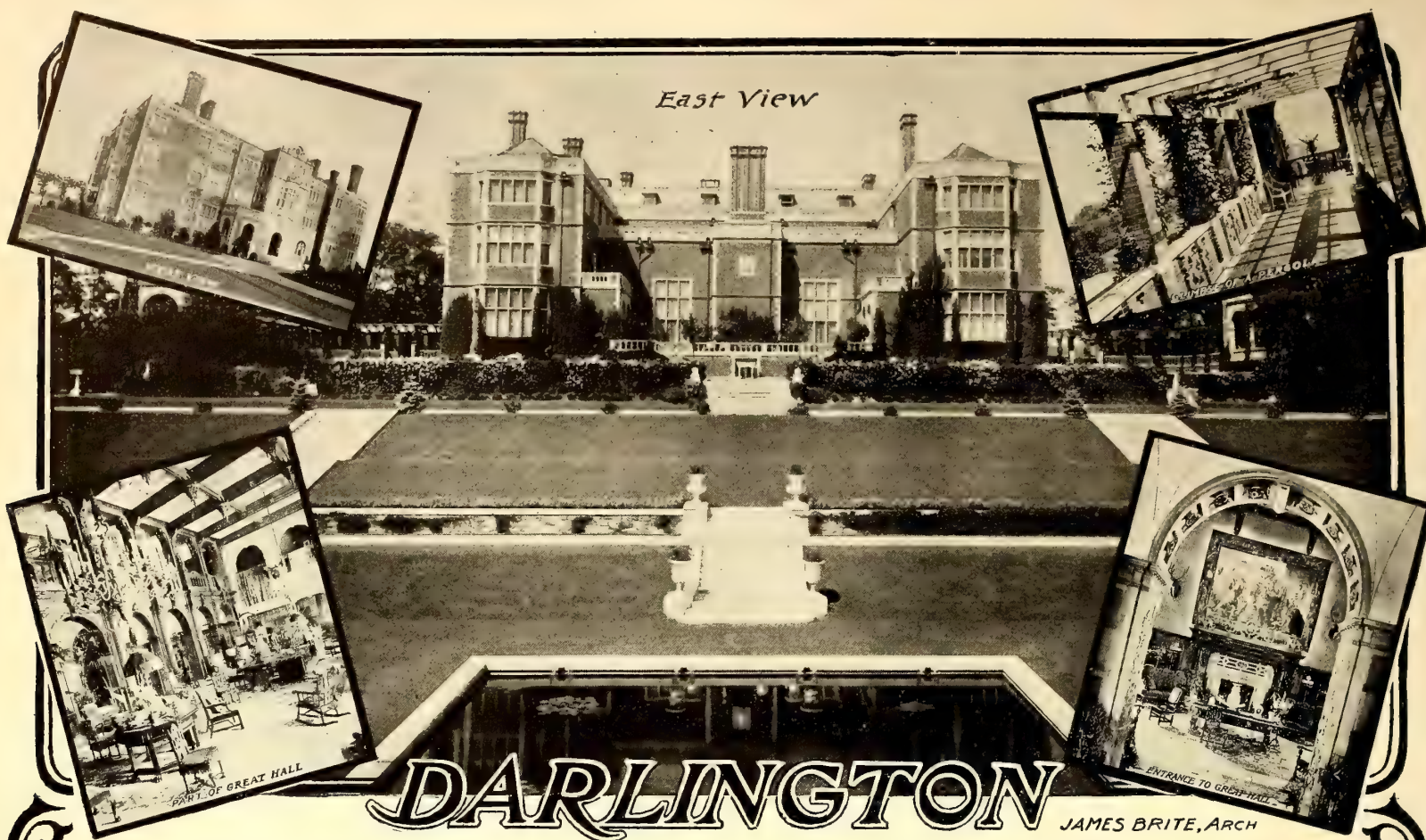
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For the second	\$25.00	For the fourth	\$10.00

Conditions

Competitors for the prizes must comply with the following conditions:

- 1 A general description of the garden, consisting of not more than fifteen hundred words, giving the size of the plot and the kind of plants used in planting, must be submitted. Give any details which you think will be of interest.
- 2 Drawings of the plot are to be made in black and white, drawn to the scale of eight feet to an inch, showing the position of the various plants and shrubs. Name each variety of plant on the plan by a number, giving a separate list with a corresponding number by which each plant may be identified.
- 3 Photographs of the garden must be submitted. It will be of interest to send as many photographs of the garden, taken from as many points of view and at different times in the summer, as illustrate the changes in the garden's appearance to the dominance of certain flowers. The photographs must be printed on printing-out paper and are to be not less than five by seven inches in size. A photograph of the site of the garden before it was developed would add interest to the series.
- 4 Descriptions, drawings and photographs are to be marked with a pseudonym which is to be enclosed in a sealed envelope containing the name and address of the competitor. All descriptions, plans and photographs are to be sent free of any name or address on them except the pseudonym. Express or postage charges must be fully prepaid.
- 5 Just as soon as the judges have rendered a decision upon the four best gardens submitted for this competition, they will notify the Editor who will open the envelopes bearing the pseudonym and containing the competitor's true name, and will at once notify the successful competitors that they have won the prizes.
- 6 The Garden Competition Editor reserves the right to publish in American Homes and Gardens all prize gardens and those gardens which in the opinion of the judges are worthy of honorable mention. The names of those whose gardens are reproduced will be published with the photographs.
- 7 Contributions are to be submitted to the Garden Competition Editor, American Homes and Gardens, Munn & Co., Publishers, 361 Broadway, New York.
- 8 The garden competition closes September 15, 1910. Contestants need not to be subscribers to American Homes and Gardens, and no charge or consideration of any kind is required. No photographs, manuscript or plans will be returned.



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Interiors Remarkable for Beauty and Splendid Proportions

THE richly carved woodwork is chiefly of English oak, Circassian walnut and California redwood. Caen stone and marbles are also used in profusion, and decorations are the work of artists of high repute. The most impressive feature of the interior is the magnificent Great Hall, two stories in height with oak carved gallery and walls of Caen stone. The fittings of this great room are unusually striking and suitable, including a large built-in pipe organ, extraordinary rugs, hangings and furniture. Here and in other rooms are numberless art treasures in bronze, silver, porcelain, wood, ivory and needlework. There are paintings by great masters, tapestries and embroideries with histories and of rare value, and a remarkable collection of Chinese porcelains. Throughout the house are many pieces of antique furniture and costly reproductions.

The Grounds are Spacious and Highly Ornate

THE beautiful terrace front with its grassy slopes, broad stone stairways, and mirror pool; the extensive vine covered pergolas and pavilions which are integral portions of the mansion; and the stately entrance front, about which are grouped a wealth of evergreens, box trees, Japanese maples, flowering plants and shrubs—cannot be adequately described or pictured. On the near-by wooded slopes and drives are many thousands of rhododendrons. Beyond the lawns are the extensive formal gardens with large fountain pool, then the greenhouses of extraordinary size and completeness, filled with choice flowers and rare fruiting vines and trees. An abundance of pure water from an artificial mountain lake (a part of the estate) has been piped to every desirable part of the grounds and into every building, with ample pressure and equipment for fire protection. The lake is a well stocked trout preserve.

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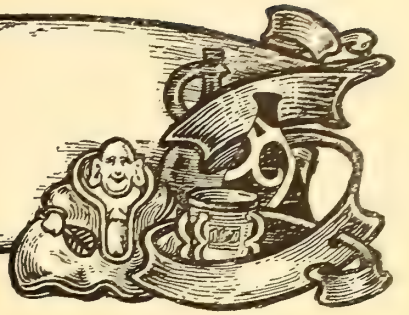
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For further information apply to E. F. CARPENTER, Agent, Ramsey, N. J.

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American Homes and Gardens for September



Fences, Walls and Hedges

The opening article for this issue is on fences, walls and hedges and is profusely illustrated by many fine engravings showing the kinds of materials of which a fence or wall may be constructed, and the style in which it may be designed. In pattern, material, quality and cost, fences are of wide variety, and those costing the most are not always artistic and appropriate. Simplicity expressed in rustic timber, field stone, brick or cement on wire mesh are frequently more effective than fine workmanship and elaborate materials, as the author shows.

Decorations and Furnishings for the Home

The seventh paper by Alice M. Kellogg is devoted to an article entitled "Built in Furniture." The main feature of this article is to point out the various kinds of furniture that can be built in as a part of a house and at the same time show the amount of space saved by doing so. A study of the illustrations will show how it is possible to build in bookcases, window and other seats, sideboards, and china closets as a part of the house construction, and how readily these pieces of furniture adjust themselves to the economic problem in house building.

An American Potter

The study of pottery is a subject of interest to all art lovers, to the layman as well as to the molders of clay. Grace Wickham Curran has prepared an excellent article on "An American Potter, Her Home and Studio," with illustrations showing some of the important work which is now being done in the studio, and also views of the home of the potter and her garden. The article is an interesting one and contains much information for one attracted to the subject.

A House and Garden

One of the newer and most noticeable of the recent residences and gardens, is the one built for Charles H. Bond, Esq., at Swampscott, Mass. The house is chiefly conspicuous for the excellent quality of the Colonial style expressed throughout the interior and exterior as well as in the garden, making the entire estate one complete and harmonious whole. Mary H. Northend has prepared an interesting paper on this place which is illustrated by many fine engravings.

A Country Seat

The country seat of G. St. L. Abbott, Esq., at Concord, Mass., forms a very interesting subject for an article by Barr Ferree. The estate is described in a comprehensive and pleasing manner, and it is illustrated by many fine engravings of both the house and the garden. The house is a splendid one and is filled with antique furnishings. The engravings show both interior and exterior views.

The Wasp's Year

This is an interesting article on the study of bees, by Harold Bastin. Mr. Bastin takes one into the life of the bee, and gives a talk on wasp architecture.

Some Minneapolis Homes

One of the principal characteristics of one of the most progressive and flourishing cities of the Middle West, is the artistic and attractive homes to be found in it. Minneapolis is certainly a "City of Beautiful Homes" built on a broad scale, and without any attempt or pretence to be more elegant than the requirements that a refined and cultured people demand. The houses illustrated are representative of a few of the best of moderate cost that have been constructed recently.

Handicraftsman

The feature of the handicraftsman's department in this issue is an article on "Sun-dials Built at Home," by J. C. Squires. The article is an exceedingly helpful one, and is full of practical ideas and advice on the subject of the working out of the dial and the making of the same. It is illustrated in a convenient manner with drawings showing how the work can be done, and with photographic views presenting the construction in a completed form.

The Kinds of Evergreens to Grow

Charles Downing Lay has prepared a paper on the proper kinds of evergreens to purchase and to grow, and presents a plan showing how they should be planted in order to secure the best results. It is necessary in order to attain the most effective developments, to study the coloring of each of the shrubs, so that when planting them in groups the objects in view may be thoroughly attained.

Autumn Work in the Garden

This is the season of the year when one must begin to study the work which is to be done in the fall in preparation for the winter and early spring. Ida D. Bennett has prepared an article containing a vast amount of information in regard to the kind of bulbs to plant and when to plant them, together with other valuable information for the amateur gardener.

The Hydrangea

It is little wonder that a shrub so boldly decorative in its outline and character, and bearing plume flowers of such exquisite coloring as the Hydrangea should find so welcome a place in the hearts of all true lovers of plants and flowers. The Hydrangea is one of the finest shrubs for outdoor culture and Eben E. Rexford has prepared an illustrated article on the subject and tells of some of the best varieties of Hydrangeas to use for ornamental bedding or about the home grounds.

Suburban Windbreaks

In flat lands where there are no hills or wooded stretches to protect one's property from wind blasts, it is necessary to devise some plan by which it can be relieved from the drifts of snow in winter and from sand storms in summer. E. P. Powell tells in an interesting way how this may be accomplished, pointing out the kind of trees to purchase for that and the best manner in which to plant them.

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CONTENTS FOR AUGUST, 1910

	PAGE
THE COURT AT "HARBOUR COURT".....	Frontispiece
"HARBOUR COURT"—The Residence of Mrs. John Nicholas Brown, Newport, R. I., By Barr Ferree	295
BERNARD PALISSY, THE FAMOUS FRENCH POTTER AND HIS WORKS. By Charles A. Brassler	302
"CRYSTAL BROOK"—A Co-operative Colony..... By Jerome Walker, M.D.	304
DECORATIONS AND FURNISHINGS FOR THE HOME—VI. The Arrangement and Hanging of Pictures By Alice M. Kellogg	309
SOME NOTABLE GARAGES..... By Robert Prescott	312
FLOWERS AS DESSERT By Monica Bastin	314
SOME NOVEL FRENCH CHIMNEY POTS..... By Frances B. Sheaffer	315
"A NOOK IN A FORMAL GARDEN".....	316
FURNITURE FOR THE HOME—Garden Furniture..... By Esther Singleton	317
THE HANDICRAFTSMAN—Methods of Beautifying the Common Gas Light, By Catherine A. Jensen	321
MAKING PLUMES OUT OF CRÊPE PAPER..... By Ethel Jones	322
IMITATION MARBLE By A. J. Jarman	323
THE MODERN HOUSE By Paul Thurston	324
GARDEN NOTES By Charles Downing Lay	329
THE HELIOTROPE AS A BEDDING PLANT..... By Ida D. Bennett	330
VEGETABLE FOUNTAINS By W. R. Gerard	331
Garden Competition for 1910	American Homes and Gardens for September
Correspondence	New Books
Canning and Preserving Fruits; Hints for the Housewife	

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The court at "Harbour Court"

AMERICAN HOMES AND GARDENS



Volume VII

August, 1910

Number 8.

“Harbour Court”

The Residence of Mrs. John Nicholas Brown, Newport, R. I.

By Barr Ferree



ARBOUR COURT, the residence of Mrs. John Nicholas Brown at Newport, stands in a beautiful property richly shaded with trees, and finely shrubbed, near the western end of the promontory where most of the great summer palaces and cottages are located. It is precisely the situation for a delightful home, for the natural beauties of the land itself are enhanced by its situation, high above the harbor, affording a prospect of endless beauty and charm.

And here, as though this was the site of sites for such a home, Messrs. Cram, Goodhue & Ferguson, the architects, of Boston and New York, have designed and built a charming house modeled in a very free way on the lesser châteaux and farm houses of Normandy. It is a style that so readily lends itself to the needs of the spacious American country house, that it is strange it has not been more frequently adopted in contemporary American building. Nevertheless we may be sure that it was not chosen here in any search for novelty. Of all ideas in architecture that is the



Newport Harbor from the terrace of “Harbour Court”



The terrace

last that appeals to the cultured architect or to the discriminating client. But, now that the house has been built, the drives and walks laid out, the shrubbery developed, the whole place welded, as it were, into an harmonious unit, it is apparent that no other style would have been so well adapted to this situation, nor, we may well imagine, so admirably fitted to the family life for which the place is intended.

Both in its design and style, "Harbour Court" disclaims all pretence to be a palace with which so many of the Newport villas are confused in the popular mind. That it is a handsome house, spacious and elegant in all its aspects, within and without, goes without saying: these were but part of the essential requirements under which it was built. But an adherence to this programme does not transform the structure into a palatial mansion in any sense at all, and both architects and owners are to be congratulated in the very successful way in which these matters have been treated, these problems solved, the actual results achieved.

The elementary programme to be followed in the design of such a house necessarily called for certain large and spacious rooms for general and festal purposes, an ample arrangement of the service rooms, and a generous number of bedrooms and guest rooms. This is the problem presented in all houses of any size. The individuality of the architect gives the individual solution, and the success of his solution is, in large measure, dependent upon the freedom of action his client allows him. Let us assume that the former was abundant, since of the latter every one who is familiar with the work of these architects knows there is a plenty.

The house is built around two sides of an open court.



The drawing-room

It thus consists, in a sense, of a main building and a wing, an irregularity in planning to which the style chosen as a model readily lends itself. The three chief rooms, together with the hall, the vestibule and an office, are located in the main structure. The wing is cut in two by a vaulted passage that serves as a carriage entrance; the half adjoining the main building is used as dressing and waiting rooms, while store rooms and laundries occupy the farthest end. The kitchen, with an elaborate appendage of minor rooms, is in a wing at right angles to this, which abuts against the main building. Put into words, the plan may seem quite irregular, and indeed this is entirely true, yet it has been developed in an extraordinarily happy manner, and is at once interesting as a plan and successful and desirable in its serviceability and utility.

Very graceful and delightful is the architectural expression given to this plan. The house is built of brick, over which is floated a coating of cement, warm gray in color. The trimmings, which are strictly architectural in their scope, are limited to the door and the window frames, while the quoins of the corners and the string courses are of Indiana limestone. The roofs are of slate, laid in the European manner; that is, with thicker courses at the eaves, and courses of diminishing thicknesses towards the ridge.

The basic elements that enter into the design of this house are now fully disclosed. There is an original floor plan, seemingly irregular in arrangement, but actually admirably adapted to the internal needs of the dwelling.

There are simple materials used in the superstructure. And there is, above all, a mobile style, capable of fine adaptation to precisely this kind of a ground plan. It is a style, moreover, which achieves its effect by very simple means,



The hall



The library

by broad wall spaces, by an almost complete suppression of ornamental detail, and which depends on form and proportion for the extraordinarily charming results it obtains, not only in the land of its natural development, but here, above the waters of Narragansett Bay.

The main building, as might be expected, is rectangular in general form. Each corner is emphasized with a pavilion that projects slightly beyond the main or connecting wall, but which in the corner adjacent to the wing is developed into a tower, crowned, like the other pavilions, with a pyramidal roof, but here loftier and more amply developed, the chief point of impressiveness, in fact, of the whole exterior. Appropriately enough the tower stands at the junction of the main building and the wing, uniting and

ornament, its own simple enrichments are strengthened by its surroundings. But this quiet entrance feature is enhanced with other motifs; by the three rather narrow windows immediately above it, by the pair of leaders with their ornamental heads on either side of it; and, above, by the single ornamental dormer in the roof, a very delicately modeled dormer, with a splendid wrought iron railing before it. The semi-circular dormers in the roof, one on either side of the center, help to emphasize the importance of the center of the front.

The wing is even more severely treated than is the main building. The walls are plain and solid, and quite devoid of ornamental features, for the window frames can hardly be so designated. The farthest extremity is treated as a



The dining-room

harmonizing the two parts into a single unity. The main stairway is contained within the tower, and the great mulioned window on its outer face opens on to the chief landing.

Of architectural ornament as it is technically and popularly understood there is none at all save in the entrance porch that contains the vestibule to the main hall. This is a somewhat shallow structure, built wholly of limestone, with a decorative frontispiece in which two plain coupled pilasters support a Doric frieze. Above is a railing of wrought iron, while a growth of flowers and vines gives a welcome note of color. Simple as it is, this porch is entirely adequate, for being applied to a wall otherwise devoid of

pavilion, with a roof markedly lower than the pavilion roofs of the main building. The lower walls here are solid without openings, which, however, reappear in the second story. The leaders, which are similar to those on the main building, are, indeed, the chief ornamental features. Attention is thus immediately centered on the carriage entrance, which is surmounted with a low segmental arch, and which, save for a shallow hollowing and a triple keystone, is without molded treatment.

A description of this aspect of the house would be incomplete without more than a passing reference to the court which it encloses on two sides. This is a spacious open area, filled in the center, with a great circle, in the



The fountain in the court



The house from the pier

midst of which rises a graceful fountain. All around it is a luxuriant growth of shrubbery, while great trees which shade the outer grounds grow close up to the house. It is a beautiful setting, flooded with sunlight, and as charming an entrance as one would wish to have.

Quite as simple, also, is the terrace front, the delightful spot from which so many beautiful views may be obtained of Newport harbor. A long central wall is enclosed within end pavilions, here identical in dimension and design. Between them the wall is recessed within a loggia, in which a plain entablature is supported by a couple of Roman Doric columns; above are five plain windows, while there are three dormer in the roof, with a single dormer in each pavilion. The kitchen wing is recessed behind this front and has its own pavilion set not quite in the center but somewhat toward the house. The roofs of the dormers, as well as the lofty lines of the main roof, produce an eminently picturesque effect as seen above the trees, and are, indeed, the chief external beauty of the house.

The house, as has already been stated more than once, is provided with two entrances, a monumental entrance directly from the court, and a carriage entrance beneath the carriage porch. The latter opens to a whole suite of introductory rooms. An open porch is arranged within the vaulted archway, from which opens the side vestibule that leads to a corridor on either side of which are dressing and waiting rooms. Farther on is the elevator and a secondary staircase, while a turn to the right conducts one beneath the main staircase to the great hall by which the rooms in the main portion may be approached.

The hall is paneled in oak throughout, with a deep Doric frieze supported on coupled channeled pilasters. The plaster ceiling is divided into panels by rich bands of ornament,

and magnificent Oriental rugs are spread upon the hard wood floor. The windows, which are necessarily limited to one side—that of the court—are contained within paneled recesses. The mantel and fireplace are immediately opposite the entrance door, and on either side of each are lofty standards for electric lights. There are some fine pieces of furniture here, and the main stairway ascends in easy stages at the farthest end.

The salon occupies the center of the house, with windows opening on to the loggia above the terrace. It is a stately room, designed in the Louis XVI style. The walls are paneled throughout, with larger rectangular panels above a low wainscot. Narrow ornamented panels are set beside the door and window frames, while above the doors are wreaths and festoons of flowers. There is a great built-in mirror above the mantel, and the plastered ceiling is devoid of ornamentation. The colors are gray, white and gold.

The dining-room is equally subdued in its treatment. The ornamental detail here is very restrained, and is limited to the simple moldings of the panels, and the hardly more pronounced ornamentation of the wainscot. The mantel alone, with its enriched frame, its Ionic columns and pilasters and marble facing, is the exception to the otherwise marked simplicity of this room.

The library is somewhat more ornate. The paneled walls of oak, where not occupied with the built-in-bookcases, are hung with magnificent tapestries. The frieze is of rich brocade, while the panels over the doors are molded without foliage. The mantel is an old piece of English work, Elizabethan in manner, which fits well into a house otherwise closely French in style.

As befits a mansion of this style and size, the service rooms are most extensive. A spacious butler's pantry ad-

joins the dining-room and through it access is had to the kitchen; at one end is a vault, quite in the center of the house. Beyond the kitchen are sculleries and store rooms, with a separate kitchen for pastry. The servants' hall is beyond the latter room, and the house is completed, on this end, with a servants' porch. Behind, in the corner formed by the kitchen and the service wings, is the servants' court. The whole of the upper floor of the main wing is given up to the servants' bedrooms.

The larger part of the second floor has been taken by Mrs. Brown for herself and her son. Here is a really fine suite, consisting of her own bed-room, boudoir, bath and maid's room, together with her son's bedroom, dressing-room and bath. These all form one unit and occupy nearly all the main part of the house, with a private concealed stairway down to the main floor and up to the play room on the third floor.

The handsome stable deserves more than the few words that can be given to it. Standing in the midst of a grove of beautiful trees it is a thoroughly picturesque and delightful structure. It is built around three sides of an open court, enclosed, on the fourth side, with a high wall surmounted with tiles. The upper story of the two end wings is designed in half-timber, and is exceedingly effective. The group includes carriage house, stable, automobile rooms and other essential parts, while quarters for the men are arranged in the second story.

It has become rather a commonplace to look for fine houses, built in a fine way and designed in a fine style in Newport. There has been no more remarkable manifestation of contemporary interest in domestic architecture than

the really splendid houses that many of the rich folk have built for their own use. And in Newport it has become quite natural to look for something out of the ordinary, since it is the acknowledged play-city of the rich, and some of their most pretentious and costly dwellings are to be found there. At all events a rapid competition in handsome houses has distinguished our "Summer Capital" for a number of years, and scarcely a season passes but some new wonder is opened for the admiration of the privileged persons admitted to it, or for the bewilderment of the less fortunate ones who must view it from a distance. "Harbour Court" is by no means a pretentious house; its splendors are not thrust upon either the visitor or the chance observer; but it is easily entitled to rank with the best of recent Newport palaces, and more than holds its own in comparison with good houses everywhere.

It is, however, quite unfair to compare this delightful house with any of its neighbors. Its merits are its own, and these are ample enough to stand any test to which it may be subjected. It has no pretensions and manifestly makes none.

It is a fine summer home, fine in every way, in appearance, in appointments, in situation. It is quite obviously a comfortable one, intended and designed to be comfortable and without pretence.

The programme presented to its architects was the comparatively simple one of meeting these requirements in an elegant and architectural manner. The success that has crowned their efforts is a fine compliment to their skill and a satisfying commentary on the merits of the conditions they had to meet.



The stable



Bernard Palissy, the Famous French Potter and His Works

By Charles A. Brassler



BERNARD PALISSY, whose statue by Barrias appropriately graces the court yard of the Ceramic Museum at Sevres, is one of the most interesting figures in history.

Born about 1510, near Agen, now in the department of Lot and Garonne, France, he was apprenticed early in life to a potter, and interested himself greatly in the technique of his calling, particularly in the possibilities of the various materials. He traveled in France and Germany, keeping this object in view and studying, for this purpose, geology and natural history, supporting himself in the meantime by working as a land surveyor. About 1539, however, he settled at Saintes and here, while engaged in his calling, he began his systematic researches into the manufacture of pottery and the composition of enamels. It was here, he says in his book, "L'Art de la Terre," "that without considering that I had no knowledge of argillaceous earths, I began my researches into enamels, like one who gropes in the dark."

An enameled cup of faience which came into his hands inspired him with the determination to discover a method of producing white enamel, and for nearly sixteen years, neglecting almost everything else, he devoted his time and attention to investigations and experiments in this direction. During this period, doubtless, he made the discoveries as to colorings, glazes, etc., that laid the foundation for his future success. His first attempts were unsuccessful, but he pursued his researches with unparalleled persistence and energy, sacrificing everything to what was then considered more or less of a chimera, and to what brought him no profit. He exhausted all his resources, and lacking fuel for the firing of his kilns, was reduced to the necessity of burning piece by piece his household furniture. Ridiculed by his neighbors, bitterly reproached by his wife and tormented by the cries of his hungry children, he nevertheless persevered, until finally, when reduced to the last desperate extremities, success rewarded his efforts.

Unlike most of the investigators and experimentalists of his time, Palissy

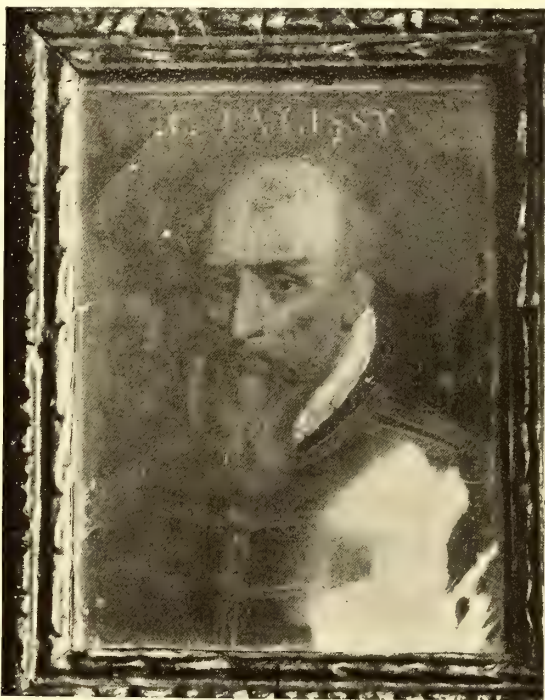
had conducted his labors systematically, and when he attained his object, he was able to repeat his work and obtain the same results. A few vessels, ornamented with life-like representations of reptiles, insects and small animals, and colored true to nature, were a revelation to the ceramists of those times and brought prices that soon enabled him to forget the hardships through which he had fought his way to success. He continued and perfected his

researches, and soon became famous, winning favor with the nobility and royalty, in the embellishment of whose palaces his genius was chiefly employed. This friendship stood him in good stead at the time of the massacre of St. Bartholomew, when the powerful protection of Queen Catherine and Anne de Montmorency, wife of the constable, saved him from the fate that befell so many of his fellow Huguenots, for Palissy had embraced the reformed faith.

A man of studious habits and keen intelligence, Palissy was among the earliest of French scientists to substitute for the fables and fanciful theories of so-called philosophers, hard facts, that were capable of practical demonstration. In 1575 he commenced the delivery of a course of lectures on natural history and physics, in which he gave a correct account of the origin of springs, the formation of stones and fossil shells, and advanced theories as to

the best methods of purifying water, the use of marl as fertilizer, etc., that modern scientific research has proved to be correct. He was arrested as a heretic in 1588 and imprisoned in the Bastille, but in 1590, before his case had been disposed of, he died.

Quite a number of authentic specimens of his work are in existence, and they are practically as priceless in value as they are superb in execution. At the Louvre and Cluny Museums, from which our illustrations are obtained, he is very completely represented by important specimens showing the three distinct styles that he adopted in the course of the development of his art. His first dishes were usually oval in form, decorated in the center and at the edges with animals, modeled after nature, fish, frogs, snakes, shells and shell-fish, reposing on flowered moss, or swimming



Portrait of Palissy. From an old English miniature on vellum at Cluny



Palissy's reproduction in pottery of one of Briot's masterpieces. The Temperantia plate.

in streams of transparent water; at the back enamel marbled in yellow, green, and red. In his second style Palissy partly abandoned the rustic decoration of his pieces; he retained only the shells as a framing, and gave to the central subject the chief importance. Finally, in his third style, he abandoned the rustic completely, and used only the marbled enamel as a poly-chrome attraction. The modeled figures then became very important, and sometimes he reproduced in poly-chrome pottery, the pewter vessels of the at that time celebrated Briot, such as the famous piece which gives the "triumph of temperance," of which an illustration is here presented, and he modeled in miniature sculpture and



"La Belle Jardiniere," a famous plate by Palissy preserved in the Cluny Museum

would be, after firing, known quantities, a knowledge that enabled him to duplicate, with such wonderful certainty, the color effects of the fish, reptiles, insects, etc., he loved to reproduce. The extent to which his style was imitated affords the most practical proof of the favor it enjoyed.

The specimens of his art collected at the Louvre and the Cluny Museums and presented in this article, certify the brand of excellence that time and fame have stamped on the works of the French artist and scientist. If not an

axiom, that imitation can never be quite as good as the original, still it must appear that these examples are in evidence sufficiently to illustrate the conclusion that the



Pitcher belonging to the famous Temperentia basin and two candlesticks, all in the Louvre



A cup and pitcher made by Bernard Palissy and now preserved in the Louvre

afterward colored and enameled a very diversified series of small articles, nurses, hurdy-gurdy and bagpipe players, etc.

We produce herewith a portrait of Bernard Palissy from an old French miniature of his period on vellum, that is preserved at the Cluny Museum. Palissy is represented, full face and in court costume with ruffs. His doublet is embroidered and relieved with gold, the sleeves are be-ribboned, and on the chest is braid. Above the head appears the inscription: B. Palissy.

His works reflect alike genius and artistic taste, and his art was original, marvelously true to nature in execution and coloring, and probably in a more marked degree than any other master of the ceramic art, he learned to perfect colors that

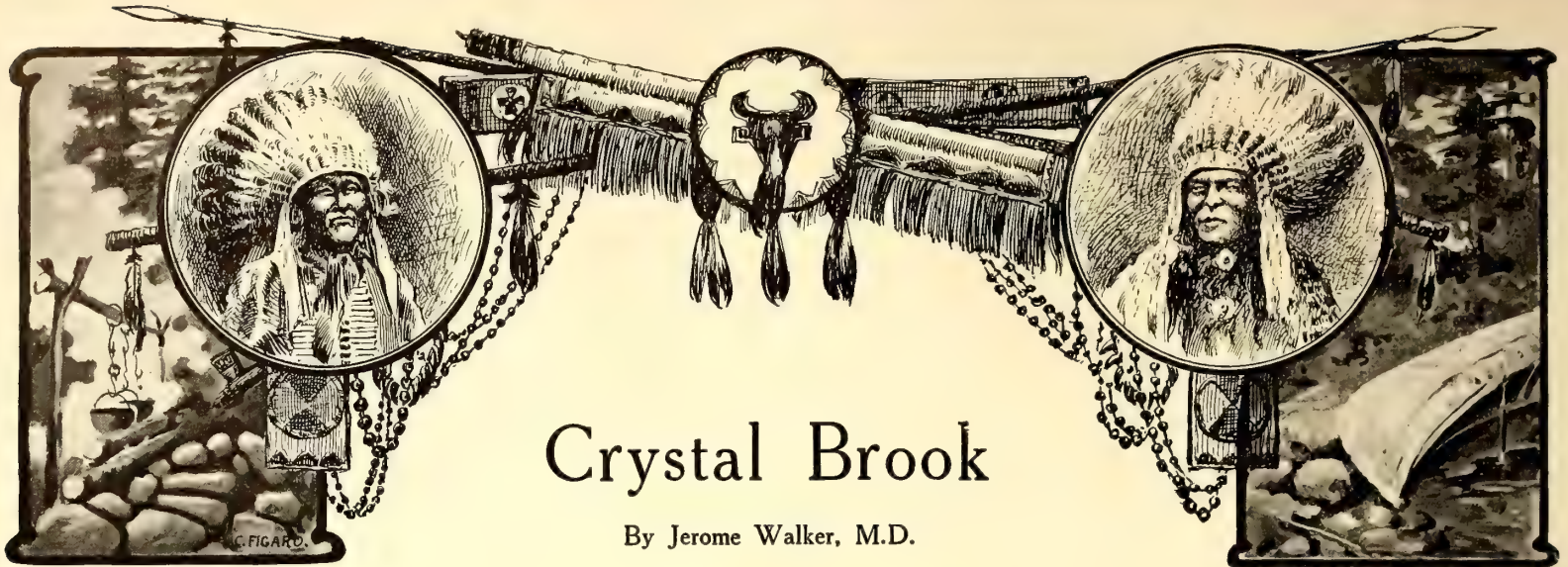
form, definition and tint this workmaster gave to his developments will ensure them a lasting place in the receptacles of ceramics, if for purposes only of copying alone.

Equally well, Palissy will be judged by his characteristic

of practicality. In no lesser degree we are to admire his patience in the face of the fact that the resources of the chemistry of long ago were small in comparison with those of the present time; nor do we admire him less when we realize that with our immense varieties of pigments he would not have violated those canons of taste, against which our own opportunities have not completely guarded us. A knowledge of his age makes one say that Palissy left the "Potter's mark" on the sixteenth century.



Large platter embellished with reptiles, fish and shells made by Bernard Palissy



Crystal Brook

By Jerome Walker, M.D.



EARLY twenty-five years ago, thinking that it was not always valuation, or name, that gives a place its greatest interest, the writer with a friend sought for some spruce little village on the shores of Long Island Sound, where we could have summer rest and recreation. We found a

pretty and a salubrious site, almost unknown to city folk, in one of the most charming sections near New York, in the country adjacent to Port Jefferson. As we approached the station and with only here and there a glimpse of a cottage, it was hard thoroughly to realize that it was but fifty-eight miles from the city. Here we took a stage and rode north down a long steep hill into the village, where there were houses and lights and a twilight view of the beautiful Port Jefferson Bay, which is almost surrounded by hills, and a safe anchorage for yachts and other craft. Beyond the bay, to the north, was Long Island Sound, known on very old maps as "The Devil's Belt."

In the morning we started in a conveyance to search the surrounding country. The shacks we did not find, as they had been destroyed, but we were charmed with the scenery; its spots of almost primeval simplicity and beauty, its wooded hills and valleys, its bays and coves with clean, clear water.

Eastward of Port Jefferson and separated from it by Oakwood (now Belle Terre) is Mt. Sinai Bay, a shallow but beautiful and safe sheet of water, and also the

pretty village of Mt. Sinai, formerly known by the Indian name of Nonowantuck. To the right of the bay's opening into the Sound (the harbor's mouth) stretches a wide, clean sand bar about three-quarters of a mile long, known as the Sound Beach.

From any hill about the bay, one sees to the north the magnificent "Belt" with glimpses of Bridgeport and New Haven over twenty miles away, and the Middle Ground and other light-houses.

So pretty, peaceful and quiet was this village of Mt. Sinai that we hired a house and with friends glad to be with us, had a sensible and a refreshing summer outing. We were among the first city folk to discover the village, but there are now several urban families who live there the year round.

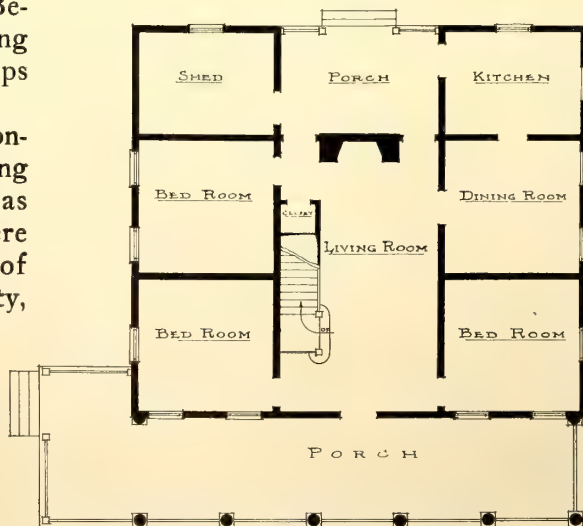
There is a tradition that Mt. Sinai received its name in this way. Nonowantuck was a long name to spell and a letter miscarried. On the complaint of the inhabitants the

government was willing to change the name, if one could be found not already in use in the State of New York. So a school teacher selected Mt. Sinai. It is a pity that the Indian name did not continue, but Biblical names were popular on the island—for instances, Babylon, Jericho, Canaan, Jerusalem, Mt. Ararat, etc.

Desirous of having a summer home for mothers and feeble children, in June, 1888, I leased and occupied Crystal Brook Neck or "The Neck" (as it was called by the country folk, a triangular piece of land in the village of Mt. Sinai projecting into Mt. Sinai Bay



Mr. Otto Reiner's bungalow



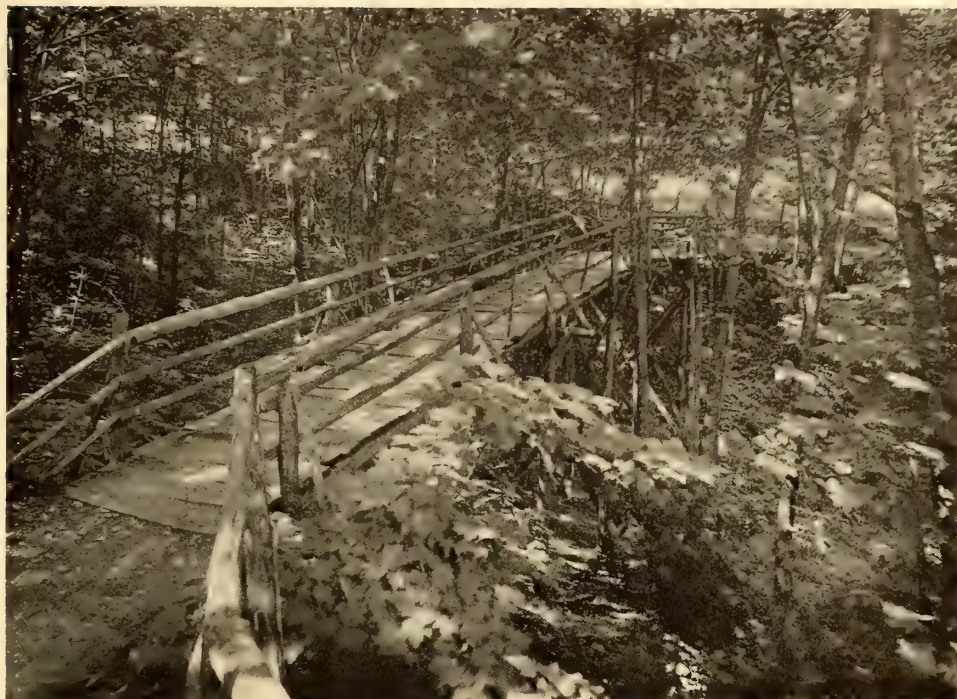
Plan of bungalow

on its westerly side. It adjoined on the west Oakwood, in the village of Port Jefferson, and was bounded on the south by the north or lower road from Port Jefferson to Wading River.

As the name Crystal Brook Neck was not a pleasant sounding name for a summer home, we discarded the last and called the place "Crystal Brook," thinking we had done something very original. But in looking over old records, deeds, wills, etc., between 1700 and 1800, I found that the place had been called Crystal Brook long before, though the name was spelled in many different ways—Christial, Christal, Cristle, Cristal, Crystle; and "Brook" was frequently made Brooke.

The home attracted so many men as well as women and children, and the place was so liked for its beauty and restfulness, that in 1890 I formed a company, which was incorporated in 1891 as "The Crystal Brook Park Association," which bought the property.

So a co-operative country cottage community was started. Suitable restrictions were established and the place was kept healthful; natural beauties were preserved. Fountains and other artificial contrivances were discouraged. It is not a fashionable place, and we who appreciate Crystal Brook, hope that it never will be of that type. It is a sea-shore and inland country combined, in which there is good society, and plenty of amusement and health are to be had in sailing, fishing, bathing, riding, walking and all outdoor games. There is no better region for botanizing, sketching and photographing. It is an ideal place for a summer school, where the wonders and beauties of nature, its trees, flowers, birds, shells and aquatic plants, can be studied. It is just the place for



Bridge leading to "Point Silence."



The chapel



Interior of chapel

one who is running down in strength, or who feels that he needs a change and a rest. Children are welcome and it is a royal place for them. Delving among old records I found the following: "Christial Brooke belonging to the tracke of land commonly called Ould Mans in ye towne of Brookhaven in ye Province of New York, in the east Rideing of Yorkshire, in ye island of Nassau, sold 10 of June 1664 to the inhabitants of Setawke

and their succesores forever by Massetewse and the Sunke squaw, native proprietors and owners of the lands, is a goodly parsell of upland and medo."

Yes, its 100 or more acres of upland and meadow are a goodly parcel. Two-thirds of the land is well wooded with oak, chestnut, pine, cedar, locust, walnut, sassafras, linden, dogwood and maple trees. Upon the other third are beautiful hedges of wild grapevine, woodbine and brier, also a brook and pond of spring water, large trees and extensive lawns.

The whole property is diversified by hills, valleys, and dales, and there is a water front of three-quarters of a mile on Mt. Sinai Bay. The soil is sandy and there are abundant springs which supply ample drinking water. There are

many varieties of wild flowers from the trailing arbutus, wild rose and mountain laurel to the common field daisy. There are many species of song birds and owls, whippoorwills, squirrels and chipmunks.

Why is Crystal Brook not better known if it is the place I have stated it to be? Simply because the nineteen families who occupy the private cottages do not wish to have more than twenty-five cottages on the place. They are careful to whom they sell the land and so there has been but little ad-



Mr. Edwin S. Gorham's cottage



"Shinglesides," Mr. Alfred W. Law's cottage

East view of Mr. Gorham's cottage

vertising. Besides the few private homes just mentioned, there are the Old Homestead (where the keeper and his family live, and where transient guests can be provided for), two cottages for rental, owned by the Association, a stable

and a barn, a cottage for domestics, a laundry, a club house or dining-room (which should have been called the Massatews Inn), a very pretty and well appointed undenominational chapel, a water plant, and a yacht club.



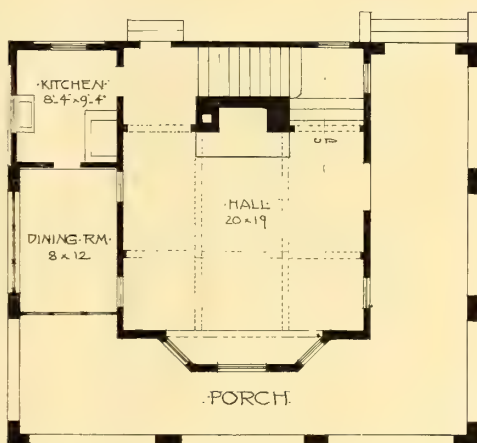
North view of "Shinglesides"

None of the cottages is alike, but all are comfortable. Even the nineteen open fireplaces are unlike one another, and are a study in the construction. Some of the cottages are on the "bluff" 100 to 140 feet above the water level, and have different views of the sound and bay, the quaint village of Mt. Sinai and the distant cities. Others are on the "slope" facing on the west Mt. Ararat and other portions of Belle Terre. Some of these also have glimpses of the Sound. One of the cottages ("Weehut") is in the woods. "Windy Knoll," on the extreme northern portion of the bluff, just beyond the "Overlook" (a part of the property preserved as a public park), has the most comprehensive view. No cottage is built within 100 feet of another and most are several hundred feet apart, and one must not cut off the view from another. This last requirement is possible on account of the peculiar configuration of the land, as knolls are of various length with valleys and vales between them. On the bluff, looking towards the water, are twelve such knolls.

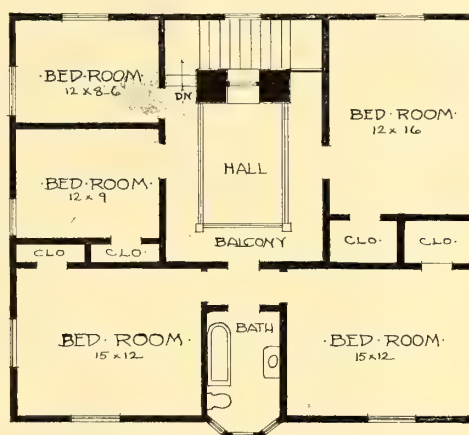
The time has arrived when a few more families and cottages are desirable. After these are obtained no more will be accepted, as Crystal Brook must ever remain an ideal country place with plenty of room, fresh, pure air, song birds and all that goes to make a summer home de-



Living-room, "Jessamine Lodge"



First floor



Second floor

some such way only can property be really restricted. In Crystal Brook the owners of cottages cannot keep swine, cows or chickens, unless given special consent by the Board of Trustees, and private stables are restricted to one portion of the property. No one can transfer property without the consent of the Board, which also seems a wise provision. The Club House, which is primarily a dining club, is centrally situated and consists of a dining-room thirty by forty feet, with immense windows on four sides and a ceiling twenty-five feet high. The pantry and the kitchen extend out diagonally from the dining-room. This club is not run for profit, but is a co-operative affair established for the benefit of those who wish to be relieved of the care of housekeeping dur-

sirable. Year by year the season grows longer and the cottages will be so arranged that a sojourn in them will include very early spring and late fall, and suitable resorts for Thanksgiving and Christmas holidays.

In order that the Board of Trustees, who are annually elected by the stockholders, may be able to prevent the presence of undesirable persons and nuisances, none of the property is sold outright but is leased for ninety-nine years, with the privilege of renewal at the end of that period. It seems to be generally agreed that in



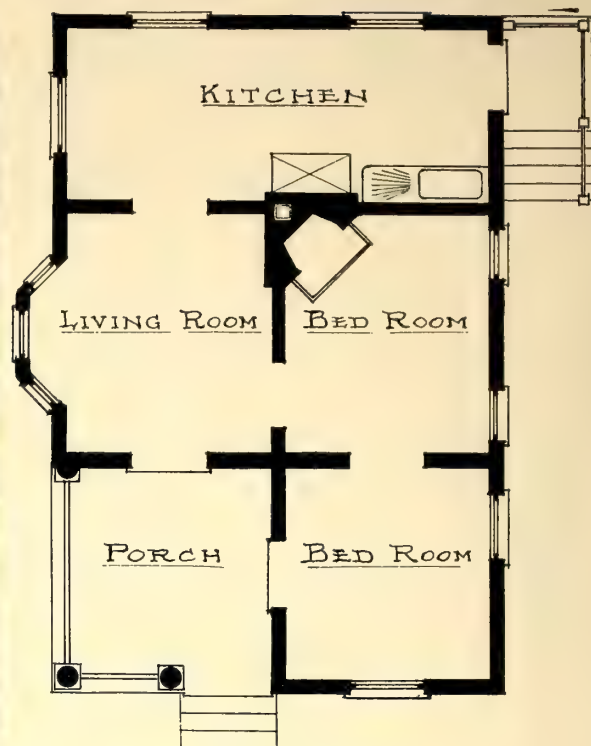
South side, "Jessamine Lodge"



"Jessamine Lodge," Mr. Hobart Walker's cottage



"Weehut," Dr. Walker's office



Plan of "Weehut"

ing the summer months. Occasionally this dining-room is used for a vaudeville entertainment or dance.

Perhaps the most unique feature regarding Crystal Brook is the fact that nature for centuries has been putting forth her best efforts to prepare this little domain for a summer residence colony. It has not needed the clever touch of the landscape architect. We found it laid out in a series of wooded knolls with valleys between, each knoll being naturally a house-site, and each valley a natural division. The



Interior of the Benedict bungalow

only landscape work necessary has been the removal of enough trees to make room for a house, enough more to open up a few vistas through the woods, to enable the residents to enjoy the beautiful water view and to provide the necessary roads. We are gradually and with the utmost care thinning out the trees, removing those which are unhealthy or of poor growth, thereby allowing the sun's rays to reach the earth in more abundance and giving a better chance for the chosen few to show what they really can attain.



Mr. J. Henry Benedict's bungalow

Decorations and Furnishings for the Home

By Alice M. Kellogg

VI—The Arrangement and Hanging of Pictures



PICTURELESS room lacks decorative interest. However complete is the equipment for comfort and utility, if the walls have no focussing points at which the attention may be caught and held, there is a sense of something withheld and missing.

Children are unconsciously very sensitive to their surroundings, and if brought up in a home where pictures are recognized as a part of the necessary furnishings, their absence is quickly felt. A child of five years was taken to a country boarding place for the summer, where the walls were of hard-finished plaster, without decoration of any kind. Before the trunks could be unpacked, the child showed evident dissatisfaction with the place, repeating over and over that she did not like it, and wanted to go back to the city. A visit to another house in the vicinity drew forth a different expression from the child, who, pointing to the walls hung with attractive pictures, exclaimed, "I like this house. Let's stay here, mother!"

Of the selection of pictures for a home much might be said, with a warning on the over-accumulation of those that are not of permanent value. Frequently one finds in a home an assortment of pictures on hand of varying degrees of mediocrity, some of too ephemeral an interest for preserving with a glass and frame, others of so personal a value that they convey no general pleasure. The pursuit of amateur photography has contributed to the too profuse collecting of pictures and the displaying of small, insignificant subjects. A better method for the preservation of prints of this description is their enclosure in books and

portfolios. When the elimination of uninteresting pictures is not possible, there is still something to be done by a careful arrangement and hanging that will, at least, add symmetrical lines and spaces to the room.

Large family portraits present difficult problems when they have not been designed for specific situations. More often than not they are misfits, either in size, coloring or framing, yet for their association it is necessary to give them a prominent position. In a hall or dining-room a portrait seems to find its best surroundings, and over the mantel one of round or square shape often appears to the best advantage.

The wall spaces around a portrait should be extensive enough to balance the canvas, as in the first illustration, and the attention should not be diverted by smaller, less significant subjects grouped about it. On a paneled wall of dark wood a portrait, real or imaginary, is a specifically good decoration. In the illustration the best method for hanging such a picture, with invisible hooks, is adopted. The choice between hanging a large picture from a center hook with the cord or wire forming a triangle below the ceiling (as in the two illustrations of dining-rooms) and of using two separate cords in straight lines from the picture to the ceiling, can be easily settled from the practical standpoint, which would exact the double security of the latter plan. With pictures of light weight the first method may be employed, or, a tack may be driven into the wall back of the frame, and the cord made short enough to be concealed by the picture, as in the two side prints of the illustration, "A Group of Prints."

Old family portraits are often inherited with their



A well-hung portrait with good wall spaces



An over-mantel decoration in a drawing-room



Portraits make excellent dining-room decorations

frames disabled or out of keeping with their new environment. It is no sacrifice, but rather a tribute to the subjects, to reinstate them with more suitable frames, and these may be "antiqued" or softened in tone to do away with too sharp a contrast between the old canvas and the new frame.

A suggestion for a decoration above a drawing-room mantel is shown in the second illustration, where a circular picture is framed with the same plaster relief work of the mantel. Less expensive would be the framing of an over-mantel picture in panels of wood to correspond with a wooden mantel. Sometimes a set of pictures, three or five, are framed together to form a mantel decoration with good results.

The charm of a picture above a mantel exceeds any other kind of decoration if the subject is correctly chosen. In a living-room or library, the mantel picture should have qualities to arrest the eye and stimulate the imagination of those who gather about the fire on the hearth.

The great advance in color printing (particularly in German products) has produced a great variety of pictures of really artistic excellence that may be bought at moderate cost, and from these one may select a landscape with interesting detail, a combination of water and land, or a sea view. These color prints, of a size suitable to hang over a mantel, cost from ten to forty dollars, and a frame may be added for five dollars up to twenty-five or thirty.

On the selection of the frame depends much of the successful appearance of a mantel picture. Not only a consideration of the coloring of the picture itself is necessary, but the tone of the wall-paper and woodwork and the general color scheme of the room must enter into the choice. Sometimes a wood, birch, mahogany, oak, chestnut or ash, can be stained to a proper tone. Sometimes a frame with a gilt finish is preferable, with the foundation of plaster or wood. Among the latest ideas in picture frames are the carved wood effects covered with gold leaf. These are imitated quite successfully in a composition that costs considerably less than the hand work. A study of the picture frames in an exhibition of paintings, will be helpful to one who is beginning to buy and select frames for a home. Here one may see how the artist who has expressed his ideal in color has chosen to surround it with glass, mat and frame.

For the cheapest frames a common window glass is used, but a fine grade of glass adds so much to the



A group of prints



A picture framed in gray

beauty of a picture that it is sometimes wiser to economize on the frame and not spare expense on the glass. Water color paintings especially deserve a clear, transparent glass.

A mat adds to the expense of framing a picture, and is sometimes omitted on this account. Here, again, is a false economy, if the picture is really benefited by the increased margin. It is a popular idea that photographs and prints look better without a mat, framed with a molding of wood, close to the picture itself. Where this rule might be successfully applied in one instance, however, its unqualified adoption would be a mistake.

With a gold frame a gold mat is used, of two different grades. A white mat in varying ivory, cream, oyster or buff is suited to a picture that shows some tone of white in the margin. Green, red and brown mats can also be had, but these must be carefully adapted to both picture and frame. However carefully the glass and mat are selected, the frame itself is undeniably of primary importance, and one can scarcely make a suitable decision without trying a piece of wood against the picture.

The wood or gilt molding that holds together the picture, glass and mat, completing the framing of a picture, requires a careful understanding of proportions and a good eye for color effect. Photographs and prints vary so much in their brown, gray or black hues, that it is sometimes necessary to have the molding stained especially to match the picture. When it is impossible to obtain the right color in a wooden molding, a gilt molding may be substituted. Sometimes two separate moldings may be joined together to make the frame wider, or a gilt beading may be added to give contrast to an oak or a mahogany frame.

An inexpensive mat and frame may be made from Japanese wood paper, which comes in a number of artistic colors. In the illustration of "A Gray Frame," a Japanese photograph is treated in this way with charming result.

For amateur work there is nothing simpler than a *passe partout*, or binding together the picture and glass with narrow strips of paper. A special binding with the back prepared with glue can be bought in white, black, gray and red.

So varied are the combinations that picture framing offers that no set rule can be established. A good plan is to carry the picture to the store and experiment with different styles of frames before making a de-

cision. A common mistake in many homes is to hang the pictures without regard to the spaces which they occupy. A long, wide wall space requires a long wide picture, with enough of the wall showing at the sides to balance the picture and the frame. Narrow spaces should be left without pictures, or else hung with those of the same shape. This point of correct spacing is of the utmost importance in giving to a room the "restful" appearance that is so desirable.

Pictures that are hung too high or too low lose both dignity and interest. The happy medium is often attained through experiments than by following any specific law. In the grouping of pictures in any one space or room, the usual custom is to bring together the oil paintings, place the water colors by themselves, with colored prints and monotonous each in their own division; but sometimes this rule must be relaxed as frames and mats of a distinctive type may need a considerate hand to place them in fellowship without paying too much attention to the pictures they inclose.

One sometimes sees a number of pictures hung like a series of steps, each on a sep-

arate line, a method that distracts the eye because there is no balance of either the object or the background. On a staircase this ascending line would be a natural following of the interior architecture and, therefore, acceptable and satisfying.

The group of three pictures in the illustration shows a careful placing of two small pictures of the same size at the right and left of a large picture with enough space between to give a correct balance. If all of the pictures had white mats (like the center picture) the effect would be still better.

If pictures are to be an enjoyable feature of a room some regard must be paid to their background. This fact is becoming more appreciated as the artistic sense receives more cultivation, and, rather than risk a mistake many home makers use a decorative wall-paper to the exclusion of pictures in certain rooms. That there is no lack of wall coverings for making a background for pictures is shown by the large assortment of plain colors, two and three tones of the same color, texture effects, burlap, crash, buckram and many novel effects designed for this particular purpose.



Decoration for a paneled wall



Fig. 1—A garage at Chapinville, Conn.



Fig. 2—Another view of Fig. 1

Some Notable Garages

By Robert Prescott



THE private garage has become an important factor in the development of the country estate. Though there have arisen differences of opinion as to the proper material of which it should be built, none may be raised as to the need of it as a subordinate structure of such form and aspect as will help to make it a feature of a property worthy of the owner's residence.

The garages on view and described in this article, besides having the practical points of accommodation for machines and for chauffeurs, foster the architectural qualities that fit them for positions near the more prominent and more elegant structures. They are bound to provide a considerable contribution to the art of making estates improved in general appearance and utility.

The garages, such as are presented in the engravings, offer the greatest opportunity for the exercise of artistic taste and development, as a close study of their treatment will reveal, and owing to the fact that the garage is usually built in close proximity to the residence of the owner, it is essential that it be designed in harmony with the master's house, as well as with the general surroundings of the site on which it is to be built.

There are many styles of architecture and various kinds

of materials that may be employed in the building of a garage, independent of the style in which the house is designed, but it is best to conform, so far as is possible, to the style of architecture which has been selected for the designing of the other buildings of an estate, so as to make the architectural feature a complete and harmonious whole.

The garage shown in Figs. 1 and 2 was built for Robert Scoville, at Chapinville, Conn. It is constructed of red brick with stone trimmings, and is designed in the style of architecture which harmonizes with the house to which it belongs. The building is erected on the side of a hill, thereby permitting the arrangement of three stories in the rear, and two stories in the front, as shown in Fig. 2.

The garage belonging to R. M. Hogue, Esq., at Philadelphia, Pa., is constructed of stone, and is illustrated in Fig. 3. It is a building of elaborate style, and is adapted to be the complement only for a house of character and elegance. A novelty is the billiard-room in the second story, in addition to the chauffeur's quarters, which occupy the remainder of this floor. It is constructed of local stone, with rough faces, and is laid with wide, white mortar joints. The roof is covered with slate.

An interesting garage is the one illustrated in Fig. 4, built for Mrs. E. L. Bartlett, at Baltimore, Maryland. It



Fig. 3—A garage at Philadelphia, Pa.



Fig. 4—A garage at Baltimore, Md.

is composed of red brick, laid in white mortar, for the first story, and half timberwork for the second and third stories. This half timberwork is placed on the building in strips, forming panels which are filled in with cement stucco. The small lighted windows are painted white, and the remainder of the trimmings are stained a soft brown tone. There is ample space for automobiles in the first story, and the chauffeur's living quarters in the second.

The English garage shown in Fig. 5 and built for A. B. Johnson, Esq., at Rosemont, Pa., is a building of most excellent detail. It is designed and built to accompany a



Fig. 5—A garage at Rosemont, Pa.

built for Henry C. Frick, Esq., at Pride's Crossing, Mass., and illustrated in Fig. 7, is to harmonize with the house to which it belongs, it should be built, as in this case, of brick with stone trimmings. The portico at the entrance to the



Fig. 6—A garage at Mt. Airy, Pa.



Fig. 7—A garage at Prides Crossing, Mass.

house of conspicuous elegance, and is constructed of local stone, laid with wide white mortar joints, to the level of the first story window sills, while the remainder of the building is beamed with half-timber work, forming panels which are filled in with cement stucco. The gables are treated in a like manner. The triple entrance way at the front of the edifice forms an easy access for an automobile either entering or leaving the building. These three openings are surmounted by handsome dormer windows, ornamented by carved verge boards.

The most simple of the garages illustrated in this series is the one built for Dr. E. A. Schuman, at Mount Airy, Pa., and shown in Fig. 6.

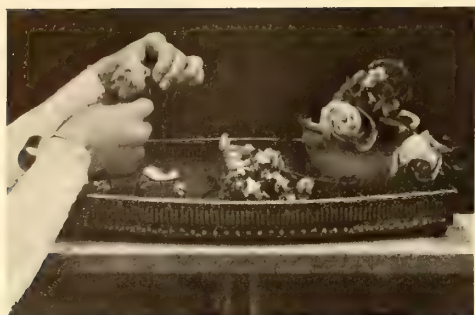


Fig. 8—A garage at Bristol, Rhode Island

main floor of the building adds a dignity to the whole general architectural scheme.

Cement is, without question, one of the best and safest materials to be used as a substitute for brick and stone. It can be employed in various forms, and, if properly constituted, it is not only a lasting quality, but also produces results that cannot be obtained in any other way.

The garage built for W. L. McKee, Esq., at Bristol, Rhode Island, and illustrated in Fig. 8, presents a very good example of this kind of construction. It is a most commodious one, and contains ample accommodations for the chauffeur's quarters in the second story.



1



2



3

Fig. 1—Laying out the flowers to dry. Fig. 2—Powdering a rose with fine sugar. Fig. 3—Trying the spun sugar to see if it will form a thread from a spoon. If it does it will be ready for dipping in the flowers as soon as it is cooled.

Flowers as Dessert

By Monica Bastin

EDIBLE bouquets form a decoration for the table which is both pretty and original. Though crystalized violets and other small flowers are often used on bonbons and cakes it is something of a novelty to see them taking a place in the actual ornamentation of the dinner cloth. At a recent exhibition, however, blooms of all kinds were shown treated in this way and arranged with charming effect. Any flowers which are good to eat can be crystalized. The process is a very simple one and can be carried out by any person wishing to try the experiment. Violets and roses, dainty in appearance and delicious in flavor, will probably be "par excellence" the favorite flowers. With those of the sweeter smelling varieties, the scent seems to become in some measure crystalized into taste. The result is a most elegant bonbon, quite as nice to eat as many more elaborate dessert sweetmeats, especially if they are used while they are fresh. Great care and some practice will be necessary before success is achieved. The flowers must be freshly gathered, but as it is important that they should be dry, it is a good plan to spread them on trays in a warm room or on a shelf in the sun for a short time before using. They must not be left long enough to become withered or limp, but as the crystalizing will probably take place in cool weather this will not happen very quickly. If possible it is best to choose a dry clear day, as the flowers are very soon affected by atmosphere, and will not harden unless the air is quite free from dampness.

A small quantity of isinglass, or about a teaspoonful to half a tea cup of hot water, some of the finest powdered sugar (crystalized, not that which is used for icing), and some lump sugar are the materials required. In a few words the actual process can be given. The flowers are dipped in water in which a little isinglass has been dissolved, and then

into spun sugar. Finally they are powdered with the dry sugar and set to dry. If the lump sugar is boiled in proportions of a quarter of a pound of sugar to half pint of water till it forms a thread from a cold spoon it will become what is called spun sugar. Make this while the flowers are drying and at the same time dissolve a little isinglass in some boiling water. Allow both solutions to cool, but not to thicken. If the stalks of the flowers are long, and the entire spray, leaves and all are required to be crystalized, the liquids should be poured into pie dishes of the most convenient size, and they should nearly fill them. The flowers should be dipped into the isinglass water, one by one, and then held head downwards for a moment so that it may run off them again. Then they should be put into the spun sugar and drained thoroughly. Next with a perforated sugar sifter, the whole of the stalk and petals are carefully covered with the powdered sugar. The petals require the most careful treatment. The flowers should be held just below the head with the fingers of the left hand, while in the right, a small camels hair brush or a pair of minute tweezers is useful for separating any of the petals which may have caught together with the syrup. There must be ready at hand some oiled or slightly buttered sheets of white paper. On these the flowers can be lightly laid as they are done, in readiness for drying. This is almost the most critical part of the process. A perfectly even heat is necessary and they must on no account be put in the oven or near a very hot fire, or indeed anywhere that there is likely to be steam. They will take some hours to dry, probably over a whole night. If they are inclined to remain a little wet on the under side, they can be very carefully turned as soon as they are dry on the top, and powdered with sugar again. Roses and heavy-headed flowers are better placed at first in an upright vase with a high narrow neck. Then as soon as the flowers are



4



5



6

Fig. 4—Violets arranged on dainty trays and tied with mauve ribbon. Fig. 5—A vase of crystalized roses. Fig. 6—The flowers do not keep well. The only way to make them last a little while is to pack them in an airtight tin.

dry they can be laid out on paper to finish the stalks.

Flowers that are being crystalized in sprays for decoration do not keep very well or very long so it is the best plan to prepare them quite a short time before they are required. If they are not to be used as soon as dry, they should be placed in air tight tins, between sheets of clean paper.

The arrangement of the flowers to the best advantage is a matter to be settled by individual taste. Sometimes those blossoms with very thin stalks are inclined to droop too much in an upright position and it is then better to place them tastefully on flat dishes. Maiden hair fern, asparagus and smilax are invaluable for putting the final touches to the scheme of decoration, and these are of course to be

used uncrystalized. Ribbons of delicate shades to harmonize with those of the flowers can sometimes be introduced with decided success. Violets look nice made into bunches backed with a crystalized leaf and arranged on shaded paper trays. When preparing roses several of the petals can be separated from the flowers and crystalized alone. Then they can be scattered round the vases as if they had fallen of themselves. At a dinner party a vase of roses, arranged on a Japanese tray with the petals beside it, would be both pretty and effective at the place of each guest.

Not only do they give a charming appearance to the table, but they make a delicious accompaniment to coffee or ices.

Some Novel French Chimney Pots

By Frances B. Sheaffer



HERE is almost no length to which the French fondness for decoration will not go. The whole nation instinctively decorates and adorns everything. The extremest example of an original subject for decoration which has appeared in Paris lately is a set of galvanized tin chimney tops made by a Parisian designer, and exhibited in the Grand Palais at the Salon d'Automne of 1908.

Chimney Pots, as every one knows, are an eminently characteristic and essential feature of all French houses, where, there being rarely any central heating, the innumerable forests of small pipes leading from individual flues, are as absolutely necessary as they are picturesque and paintable. Hitherto, however, no one has had the fancy to change the accepted shape, a straight pipe with an elevated cap to allow for a draught and at the same time to keep the rain out. When the pipes have had swinging caps for ventilators, they have been only the simplest possible expression of the tinsmith's craft.

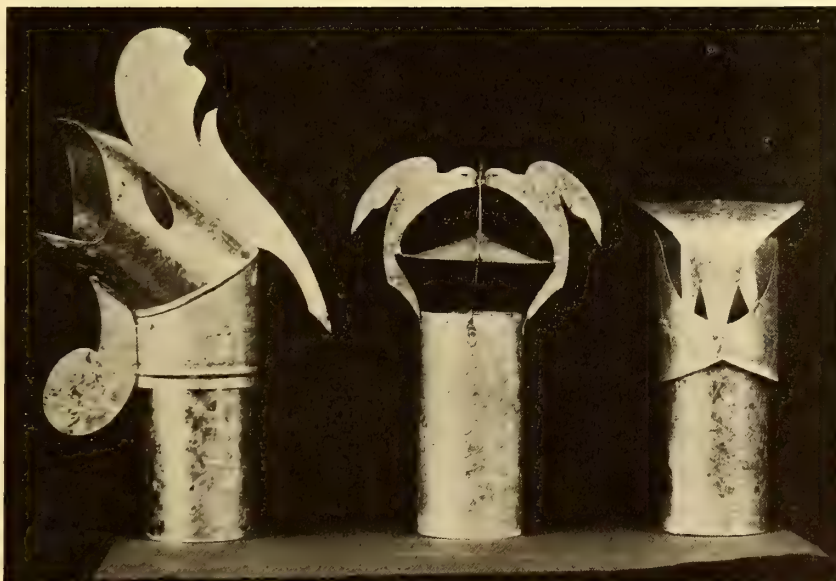
The French designer who has lit upon the novel idea of making the tin chimneys a bit more ornamental is Edouard Schenck, whose workroom is at 13 Boulevard du Montparnasse. The three exhibits he made at the Salon were treated

with great simplicity, very slightly changed, in fact, from the accepted forms so long in use. The fixed cap follows the old lines, almost the old proportions, but the tin braces which raise the cap are elongated into a group of four doves, their beaks meeting at the top in a bird kiss. The bird forms are flat, almost crude. They might have been cut out of cardboard, with a pair of scissors, but they suit the material and they make of the useful little chimney pot

an affair of the imagination, instead of a merely useful detail of house construction. M. Schenck catalogued this chimney pot as a "champignon, Colombier."

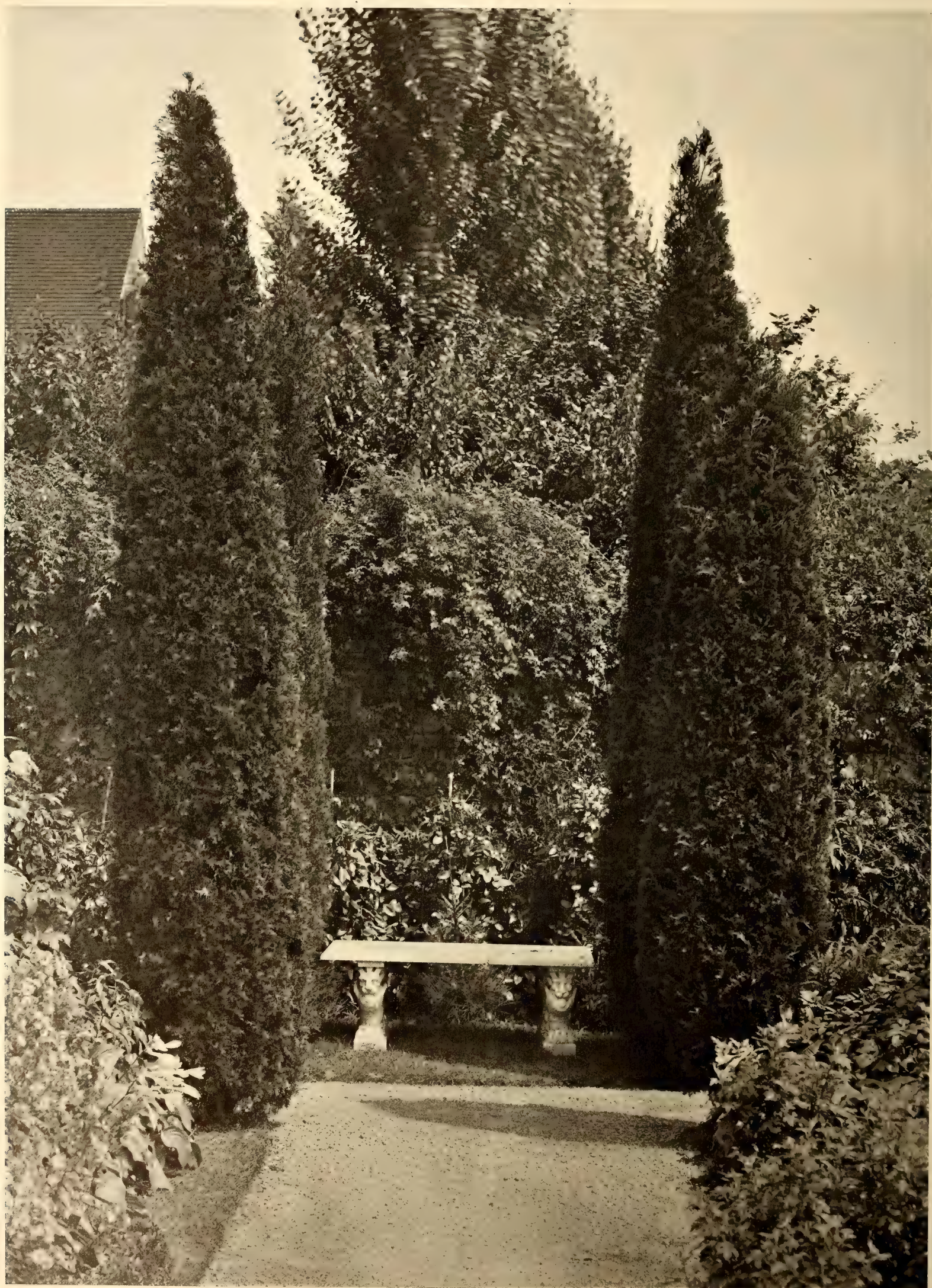
The turning lantern top of this group of chimneys was suggested by the owl, and it is so catalogued, "Hibou." Its lines are good, and the effect of an owl's head is curiously produced by the tin strips which join the folding cap and the body of the hood.

The ventilator of this group is a "Gueule de loup," a "Coq," whose comb and beard act as the necessary wings to turn the hood in the wind. The form does suggest in a remote way a cock's head. It is treated with the same simplicity as the other two chimneys; and doubtless all three are as practical as they are original and decorative. The chimney pot not only meets the requirements for which it becomes a necessity, but it adds an artistic value to a house.



Novel French chimney pots





A nook in a formal garden

Furniture for the Home

By Esther Singleton

Garden Furniture



FORTUNATE is he who looks out from his terrace with its mossy parapet, where the peacock perchance shakes out its purple glories to such a world of his own. Roses are clustering on the wall, or flinging out their fragrance below in the sun, mingled with the rare perfume of the aromatic azalea. Along the edge of the lawn, his flower-border is gorgeous with the queenly lily, the dark-blue monk's-hood, the tall hollyhock, the spiked veronica, the red lychnis, radiant phloxes, proud peonies, the tall spires of foxgloves and larkspurs, and a multitude of fair denizens of the parterre. Richness characterizes the whole, and the sentinel yews, the hedges and box edgings are there to give order and distinction with the right degree of formality that belongs to the structure that is adorned. The mural sun-dial, the splashing fountain, the sheltered arbor and the fragrant pergola, all have their places in such a garden. Nor need the landscape and the woodland with the lake be condemned. These lie outside the enclosed gardens, and all are beautiful and entrancing in their degree and place. The final fact is simple, after all, and the gardener must make it his own. It is that the house and the garden are the two

parts of a single whole, and happy is he who can best interpret their sweet relationship."

This description from the pen of a modern writer seems to have gathered into a nutshell all the salient points of the decorative, yet homelike garden, where form, color, scent and sound produce a soothing, though inspiring, effect upon the senses and the mind. A garden should be, in fact, a retreat, a place where one loves to linger, to rest, to read, or to work.

A garden, according to the opinion of an old authority, "ought to lie to the best parts of the home, or to those of the master's commonest use; so as to be but like one of the rooms out of which you step into another."

A garden is really a sort of grassy "withdrawing room." "In the garden drawing-room all the furniture is grown. The carpet, indeed, is swept, but it springs itself out of the floor which it covers. Then, too, if it should become anyway worn, we have only to leave it alone and the patches mend themselves. The curtains, moreover, of the garden room (in the shape of variegated surrounding greenery) do not wear out, and they see to their own spring cleaning or renewal. It is true that you cannot indulge a restless caprice in a frequent shifting about of ornaments



Fig. 1—A simple garden provided with old hickory furniture



Fig. 2—A bench among the peonies

(seen in, say, standard roses); but then they cannot be upset and are not easily broken. Again its airily patterned walls and luminously decorated ceilings, though these last certainly sometimes let the water through, are always provided free of cost, and woven according to the latest design. And when the hour comes for the lights to be put out and the blinds drawn down, this is ever punctually done by invisible ministrants who forget nothing, and serve us faithfully without needing tiresome directions, or expecting any wages at all."

The above description would seem to imply that no furniture is necessary in a garden; but the enjoyment of the most perfect garden ever imagined would be incomplete without some provision for rest and comfort in the matter of seats and shelter.

An old writer speaks of
"My garden sweet, enclosed with walled strong
Embanked with benches to sit and take
my rest."

And in *Much Ado About Nothing*, saucy Beatrice is enticed

"Into the pleached bower,
Where honeysuckles ripened by the sun
Forbid the sun to enter."

In regard to the furniture of a garden first come the essential parts of garden architecture, such as walls, gates, gateposts and balustrades of the terraces. The walls are, perhaps, the most important factor in the whole, and should be solid and lofty, with a beveled coping and end in pillars, the pillars ornamented with balls or some other device at the top. Niches should be avoided, for they gather dirt and dust and serve no purpose. The walls, however, should be covered with flowering vines or creepers. Gates of wrought iron always bespeak good taste.



Fig. 3—An attractive arbor seat

Paved stone or brick paths set flat among the grass are never out of place, nor is the gravel walk with a neat edging of box or grass, or some simple flower that blooms close to the ground, such as the pansy.

With regard to ornaments and "embellishments"—the sun-dial on its pillar marking no hours save the bright ones and the fountain, throwing high into the air its refreshing spray or tinkling sweetly as it drops from the mouth of some fantastic bird or animal into a basin, are always true to the spirit of the garden. However small the little paved court may be, a fountain is never out of place."

Vases and statues are "embellishments" that have no natural affinity to gardens. "Statues and such things are added for state and magnificence, but are nothing to the true pleasures of a garden," wrote Lord Bacon; and he was perfectly right. Such decorations belong to the stately garden of the

grand Italian style with its terraces and statues, temples, theatres and vases, or to the Dutch garden with its evergreens clipped into the shape of monsters or animals according to the dogmas of the topiarian art which was in vogue in England and this country in Georgian days; or to the simpler garden with its formal walks, clipped alleys, smoothly shorn bowling-greens and geometrical arrangements of flower beds that resemble carpets and rugs.

In the early eighteenth century, Batty Langley ornamented flower-gardens with fragrant flowers, fountains and beautiful statues, and advised,

"That the intersections of walks be adorned with statues, large open plains, groves, coves of fruit, of evergreens, of flowering shrubs, of forest trees, basins, fountains, sun-dials and obelisks:

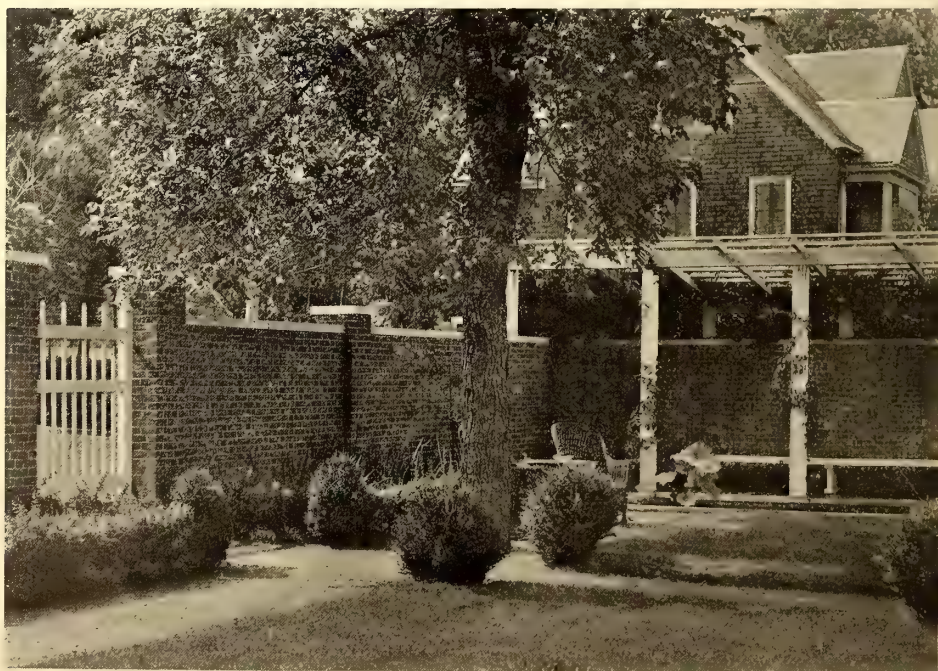


Fig. 4—"Enclosed with walled strong."



Fig. 6—A wild garden

"When in the Garden's Entrance you provide,
The Waters, there united, to divide:
First, in the Center a large Fountain make—
Which from a narrow Pipe its Rise may take,
And to the Air those Waves by which 'tis fed,
Remit again; about it raise a Bed
Of Moss or Grass; but if you think this base,
With well-wrought Marble circle in the Place."

As a contrast let us take a charming and sequestered garden of seven or eight acres planted about the beginning of the eighteenth century, belonging, not to a stately villa, but a small cottage the "habitation of an ancient maiden lady," and thus described by Sir Walter Scott: "It was full of long straight walks between hedges of yew and hornbeam, which rose tall and close on every side. There were thickets of flowering shrubs, a bower, and an arbor, to which access was obtained through a little maze of contorted walks calling itself a labyrinth. In the center of the bower was a splendid Platanus, or Oriental plane—a huge hill of leaves—one of the noblest specimens of that regularly beautiful tree which we remember to have seen. In different parts of the garden were fine ornamental trees which had attained great size, and the orchard was filled with fruit trees of the best description. There were seats and trellis-walks and a banquetting house."

Suggestions for furnishing a Dutch garden *de luxe* may be found in the following descriptions of the famous one at Het Loo, still the favorite Royal residence in Holland. The garden was designed by Marot and this account of it was written in 1699:

"The hedges are chiefly of Dutch elms; and the avenues of oaks, elms and limes. The figures into which the trees and shrubs are cut are, for the most part, pyramids. On the walls fresco paintings are introduced in various places between the trees. In the arbor walks of the queen's garden are seats and opposite to them windows through which views can be had of the fountains, statues and other objects in the open garden. The parterres in the queen's gar-

den are surrounded by hedges of Dutch elm about four feet high. The seats and prop work of all the arbors and the trellis-work on the fruit tree walls are painted green. All along the gravel walks and round the middle fountain are placed orange trees and lemon trees in portable wooden frames and flower-pots about them."

Another idea well worth imitating was seen by Madame de Sevigné at a French chateau in 1675, when she wrote to her daughter as follows:

"There is a grove of orange trees in great tubs; you walk there; and they form alleys in the shade; and to hide the tubs there are two rows of pallisades high enough to lean on, all aflower with tube roses, jasmines and carnations. It is assuredly the most beautiful, the most surprising and the most enchanting novelty imaginable."

In all periods people of taste have enjoyed the Wild Garden. Lord Bacon included a Heath in his series of beautiful gardens, and wished it

"Framed as much as may be to a Natural Wildness. Trees I would have none in it, but some Thickets, made only of Sweetbriar and Honeysuckle and some Wild Vine amongst; and the Ground set with Violets, Strawberries and Primroses; for these are sweet and proper in the Shade. And these to be in the Heath, here and there, not in any Order. I also like little Heaps in the Nature of Mole Hills (such as are in Wild Heaths) to be set, some with Wild Thyme, some with Pinks, some with Germander, that gives a good Flower to the Eye; some with Periwinkle, some with Violets, some with Strawberries, some with Cowslips, some with Daisies, some with Red Roses, some with Lilium Convallium, some with Sweet Williams Red, some with Bear's Foot, and the like Low Flowers being withall sweet and sightly. Part of which Heaps to be with standards of little Bushes pricket upon their top, and part without; the Standards to be Roses, Juniper, Holly, Bear-berries (but here and there because of the smell of their blossom), Red Currants, Gooseberries, Rosemary, Bays, Sweet-briar, and such like. But these Standards to be kept with Cutting that they grow not out of course."



Fig. 7—A rustic settee

The accomplished Elizabethan courtier would, therefore, have approved of the pretty Wild Garden represented in Fig. 6.

Gautier's idea of a garden wherein Nature should have full liberty permitted the twigs to interlace themselves according to their own fancy; the plants to creep and climb; the mosses to cover with their patches the trunks of trees; the lichens to encircle the statues with their gray bands; the brambles to bar the walks and arrest you with their thorns; the wild poppy to raise its red spark near the untrained rose; and the ivy to rove at its will and hang wreaths over the balustrades of the terraces. Moreover, full license was granted to the nettle, the thistle, the celandine, the burdock, the nightshade and all the gipsy horde of undisciplined plants—to grow, multiply, invade and obliterate every trace of cultivation and turn the flower-garden into a miniature forest."

One delight of the Wild Garden is that it admits of the owner's transplanting any wild flowers or shrubs found during his walks in the woods and fields, even to nettles, briars and thistles.

The simple seat with lattice canopy shown in Fig. 6 will be more picturesque when the creepers have covered it. A rustic seat similar to that shown in Fig. 7 would also look well. This kind of seat is always appropriate except in the stately garden where stone or marble is required. Fig. 8 represents a settee of wood on one side of a circle and a wire arch at the base of the grass steps at another.

Another variety of bench is shown in Fig. 2, which can be painted any color. It is attractively placed among the peonies to which the path leads.

No one would care to sit down under such an unattractive tree as that in Fig. 7 for example, while the high-backed settee in Fig. 3 in a leafy arbor and those in Figs. 2 and 5 are happily placed. The marble bench supported on lion's heads between two formal cedars in Fig. 5 is also harmonious. The wooden bench in Fig. 2 is effective in form and can be painted any color; but it needs some pots or vases of blooming flowers by its side. Hickory furniture such as shown in Fig. 1 is also suitable for the simple garden.

Wicker tables, settees and chairs, stained green; prairie grass chairs; and chairs and tables of wood painted green we also find appropriate; and for gardens that have comparatively little shade the hooded wicker chair used so much at the seashore in Europe and which the Dutch call "Wind Chair," is a most useful addition. Rustic lawn vases that cost as little as \$3.00, and tree seats from \$15.00 to \$30.00, can be placed almost anywhere.

Turning now to the question of the summer house or arbor, the poet Cowper's pretty idea of turning his little greenhouse into an out-of-door sitting-room might be imitated by those who own such luxuries. In 1786, he wrote to a friend: "When the plants go out, we go in. I line it with mats and spread the floor with mats; and there you shall sit with a bed of mignonette at your side and a hedge of honeysuckles, roses and jasmine." He also had another little room of which he spoke as follows: "I write in a nook that I call my boudoir; it is a summer house not bigger than a sedan-chair; the door of it opens into the garden, that is now crowded with pinks, roses and honeysuckles, and the window into my neighbor's orchard."

A portable pavilion that can be easily erected is a good investment. The one shown in Fig. 4 has a pagoda dip roof, and is screened completely and furnished with a screen door. It costs only \$125.00.

Anyone can set up a pergola, and moreover, at a trifling cost.

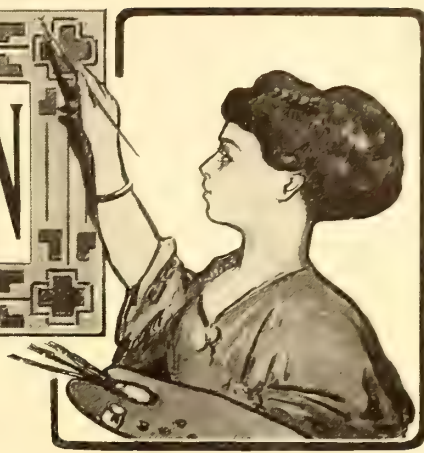
Pergola pillars, like fences, are now sold in sections, pillars at \$6.50 each, cross panels at \$5.00, and poles at seventy-five cents.

The tent, the swing and plenty of cushions for those who like to sit on the grass should be included in furnishing a garden; and last but not least comes the hammock.

"When you hang like Mahomets coffin, between earth and heaven, you experience a sense of personal detachment from the ordinary conditions of life which, however easily realized, is simply unique. You lie upon the yielding air and look through a myriad of leaves, pierced here and there with little rays of light, into illimitable space. It is then, moreover, that you best take in the special stillness of a sequestered garden."



Fig. 8—A circle of harmony



Conducted by A. Russell Bond

Methods of Beautifying the Common Gas Light

By Catherine A. Jensen

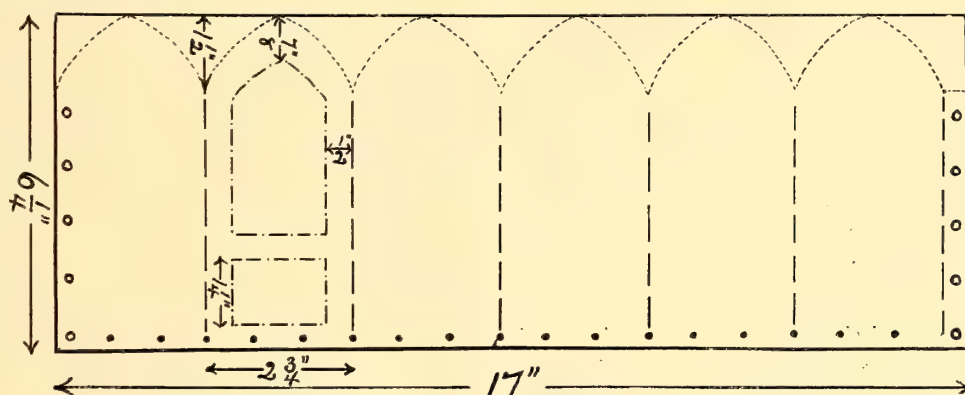


THE handicraftsman may find of practical value the following suggestions on one of the most important elements in home decorating, that of lighting. Just as the theater relies immeasurably, through its lighting, for its effects, so we in a smaller way, should be careful in choosing the mode of illuminating our homes.

The accompanying illustrations show how an ordinary gas chandelier (usually a very unbeautiful affair) can be made to add a touch of distinction to any room. Very simple and few tools are required—an awl, a medium-sized wooden mallet, and a medium-sized metal file. A board

a mechanical appearance of the work. See to it that the holes are not too large (a little over 1-16 inch is a good size); the awl can be filed down to any required size.

When the perforating is completed, turn the brass right side down and flatten the perforated parts with the mallet till well straightened out. With the awl, mark off and make holes for joining and for attaching the beads, as indicated in the drawing. Now bend the brass over the sharp edge of a ruler, held directly under the broken or dash lines, then pass the flap under the opposite end and join with large shanks through the holes, as indicated. The arched points on each panel should be slightly bent outward, to give a more graceful contour to the lamp.



Layout of the brass gaslight shade



Shade made of shells



Shade of pierced brass

An ordinary 4-inch gas-globe ring is used to support the lamp. In the ring are three screws. Hold the ring inside the bottom of the lamp and mark off on the lamp where the three screws come. When this is determined, make holes for the screws. The beads are now attached, placing the tape inside, and using small brass shanks for fastening. Lastly the ring is screwed in place, passing screws from the outside of the lamp and securing the ring inside. Unscrew the gas-tip, slip on the lamp and again screw the tip in place.

For a room decorated in light colors I would suggest leaving the brass natural color, using gold filled beads;

for a medium light room, heat the lamp in a flame and slightly polish the raised surfaces. This gives an antique effect; yellow beads look well with this lamp. For a room furnished in craftsman style, these lamps made of sheet

brass are well suited.

copper and trimmed with green beads are very effective. A piece of isinglass slipped inside each panel will prevent the flame from discoloring the metal. The lamp shown in the illustration is one of a group of four; they are more effective in groups than when used separately, though as single side lamps they also look very well.

One of the photographs shows a very easy method of beautifying an ordinary gas drop-light. The requirements are sea shells of the semi-transparent yellow and pink variety found upon the neighboring shores of Long Island and Connecticut, a bit of wire and some cord.

Two holes are made with an awl in the bottom of each shell about $\frac{1}{4}$ inch apart, then these are strung back to back, alternately, one facing forward and one backward. Start with the darker one and grade to lighter colors toward the top—this gives a dainty flower-like effect. The strands should be from eight to ten inches long; twenty

strands are required. Leave two or three inches of string on each strand for use in fastening.

Stretch a piece of copper wire, about ten inches long, till straight, then tie all the strands upon this wire, leaving about $\frac{1}{2}$ inch length of cord between the last shell and the place of tying. Unscrew the glass globe and place a strip of asbestos around the top ring of the globe. Over this pass the wire and fasten the ends securely together. The asbestos prevents the cord from burning. If the lamp is to be used very frequently, I would suggest that the shells be strung upon very fine brass, or copper wire, as the heat is apt to make the cord tender.

Arrange the strands evenly around the globe and then screw the globe into the crown. When lighted this gives as dainty an effect as could be desired, obtained with almost no expenditure and very little work. As side lights, or in groups, these lights are equally effective.

Making Plumes Out of Crêpe Paper

By Ethel Jones



THE pre-eminence of the feather for the trimming of a hat this year is unquestioned, and since the woman of fashion must crown her head with long and undeniably expensive willow plumes, a substitute for this expensive plumage has been created. The willow plume, which is one of the envied luxuries of the woman with a well-filled purse, has hitherto come from the ostrich farms of the West, and is produced by weary hours of labor upon the part of the workers who tie the multitudinous pieces together to produce the willowy effect. By this new invention the willow plume has been counterfeited so cleverly that it is difficult to detect its spuriousness, except by the closest inspection. This artificial plume has already gained some standing among those who take part in plays, or assist in open air fetes or sit in far removed corners of boxes at the theater or opera, and while conscious of the imitation of their head ornament, are secure in the fact that the artificial feather will escape detection.

Whether one may want to masquerade as the wearer of an unreal willow plume in far-off corners of the opera box or whether one may want to grace a garden party with a

paper hat and plume, the process of making the feathery thing is interesting in itself, and so relatively inexpensive and so undeniably attractive, that the woman with nimble fingers might find its construction well worth the trouble it takes to make it.

To begin the operation it will be necessary to purchase two rolls of crêpe paper, and then secure a pair of scissors, a fairly thick knitting needle, some long, flexible pieces of wire, some stout thread, and a coarse needle.

One roll of the paper is cut in two equal parts, to make the strips for each side of the plume. With the scissors pointed to the double edge of the folds, which have been carefully basted to make them secure, the strips of the plumes are cut. These strips are about the size of the individual pieces of the real willow. Each strip should be, from the basted edge to the end, about ten inches long, before being curled, and both sides of the halved paper should be as nearly of the same length as possible.

The curling process of the individual strips is most tedious, the completed feather taking about three hours to make. After both sides of the ten inches have been made the knitting needle is called into service for the purpose of curling the strips. One by one each strip of the colored



Cutting the crepe paper



Showing how the ends of the crepe paper are fastened



Showing how to curl the paper properly

paper plumes is twisted around the knitting needle. The curling process should be done carefully since the paper cannot be roughly handled any more than the real plume.

The backbone of the paper willow plume is next constructed. Pieces of wire are covered several times with strips of paper, until they present a taut appearance with no part exposed. The wire should be doubled in the middle so as to give additional strength to the part most likely to be bent by the greatest weight. The wire in the center thus

the same as the sides of the plume, and is cut into ten-inch strips, curled with the knitting needle and then carefully sewed on to the edges of the plume to complete the feathery appearance. Placing the tip requires some care, as the half sheet used in the process of its construction is very full and must go through a process of careful pleating while it is being put on. The importance of the tip is seen when, as a completed plume, it hangs gracefully over the side or the back of the hat.



Binding the stem



Rolling the feathery ends



Attaching the stem



Finished plume made of paper

secured from breakage can now be twisted in any way in which it is desired to bend the plume. The long droop over the face, on some of the large hats to be seen this season, can be perfectly arranged, or the more flat effect for the plume which is to go all about the hat, and which does not need so deep a curve on the center wire.

The tip of the paper willow plume is made last from the half of the sheet remaining for this purpose. This is treated

At all events, nothing could be more worth the experiment for those who deal in paper favors and who like to give a surprise to their friends at the dance or the luncheon. The possibilities of paper certainly do seem unlimited, but the manufacture of this paper plume, which has for months excited admiration in its real form, seems to have surpassed all other efforts in the manufacture of paper-made articles.

Imitation Marble

By A. J. Jarman



IF PLASTER of paris be cast on glass, a smooth surface can be obtained. This may be made to represent marble if the veinings are skilfully introduced. The colors for veining must all be of mineral character, as follows: Plumbago (black lead), chrome green (dark), common crocus, yellow ochre, red oxide of iron, and ultra-marine blue.

In order to introduce the color on the polished side of the cast, it must be painted in through the plaster of Paris before it hardens. The plaster of Paris should be mixed to the consistency of a thick cream and poured into a suitable mold set on a glass plate. A brush dipped in the color is then plunged through the creamy substance and the veining is painted on the glass plate. In order to enable the operator to watch and guide the brush, the mold should be

supported a few inches above a mirror. After the plaster of Paris has partly hardened, it may be reinforced by means of galvanized iron netting over which a thick layer of Portland cement is poured. After both the plaster and cement have become set, the cast is removed from the mold, and the glossy surface may be treated to a coating of amylacetate collodion, which not only fills the pores of the plaster but renders it waterproof and capable of resisting weak acids and alkalis.

A much harder material with a slight grain can be produced by mixing a small quantity of ground pumice or ground glass with the plaster. This mixture is sometimes termed Parian cement. It will be found that when the imitation marble is dry, the colors will not be more than one-third as brilliant as when wet. The excellence of the imitation depends almost entirely upon the artistic skill used in applying the color to the plaster.





The Modern House



By Paul Thurston



THE houses illustrated in this group differ widely in style from one another, and while this is true, each one of them is adapted to being built in any part of the country, either as a suburban home or a country house.

The brick and stucco house, shown in Figs. 1, 2, 3, 4, 5 and 6, built for Mr. J. N. Crampton, at Willmette, Ill., is a building designed along square lines. The principal feature of the exterior is its detail, and that is what makes the house so attractive. The entrance porch, with its hooded cover, and the cluster of windows in the living-room at the front of the house, divided by wooden tracery, are some of the details which add so much to the general appearance.

The underpinning and the first story are built of red brick laid in red mortar to the level of the second story windows. The remainder of the building is covered with cement stucco of a soft gray color. The trimmings are painted white. The window boxes placed in front of the living-room windows, and the tubs placed at each side of the entrance steps, filled with red geraniums, add a touch of hue to the delightful color scheme of the house.

The entrance is into a vestibule, from which the living-room is reached. This room extends across the entire front of the house, and it has a pine trim which is treated with white enamel paint. Its walls are tinted a mustard yellow.

The fireplace is built of red pressed brick. The facings and the hearth are laid with a similar brick. The mantel shelf is of wood and is supported on fluted brackets.

Opposite the fireplace is placed the staircase, which

ascends to a broad platform, on which is built a cluster of small lighted windows and a broad paneled seat.

The dining-room, which opens direct from the living-room, is finished in a combination of yellow and blue. A plate rack extends around the room to the height of seven feet from the floor, and divides the wall space. That part of the wall below the plate rack is treated in a soft blue, while that part above is dealt with in yellow.

The kitchen and its dependencies are complete in all their appointments.

The second floor is divided, as a study of the plan will show, into four bedrooms and a bathroom, the latter being finished with a tiled wainscoting and floor, and porcelain fixtures, with exposed nickel-plated plumbing. Each of the bedrooms is treated in one particular color scheme.

The third floor contains a servant's bedroom and a trunk room.

The heating apparatus and fuel-rooms are placed in the cellar, which extends under the entire depth of the house.

Mr. H. B. Wheelock, of Chicago, Ill., was the architect. The concrete house is susceptible to considerable variation, and the one illustrated in Figs. 7, 8, 9 and 10, and built for Mrs. P. E. Bisland, at Meadowdale, Bronxville, N. Y., is not the exception to the rule. Messrs. Wilder and White, of New York, who were the architects of the house, have adopted the thatched effect for the roof of the house, which surmounts the exterior walls, constructed of cement stucco, with pebble-dash finish. The floor plans explain the interior arrangement of the various rooms, which are finished off in an artistic and pleasing manner. The open fireplaces are handsomely



Fig. 1—The entrance porch



Fig. 2—A brick and stucco house

made, and the service end of the house is most complete in all its appointments. There are four bedrooms and a servant's bedroom on the second floor, besides a bathroom, furnished with porcelain fixtures. The house built for Mr. A. H. Aylesworth at Wilmette, Ill., illustrated in Figs. 11, 12 and 13 is another adaptation of the use of cement. The first story of the building is constructed of cement stucco, while the second and third stories are of half-timber work and stucco. The trimmings are painted a bottle green, harmonizing well with the gray tone of the stucco walls, and the dull green stain of the shingled roof. The hall is a central one, containing an ornamental staircase ascending to the second story. The living-room extends the entire depth of the house and it has a large open



Fig. 5—The dining-room.



Fig. 6—The living-room

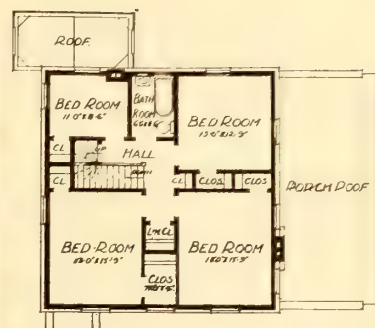


Fig. 3—Second floor plan

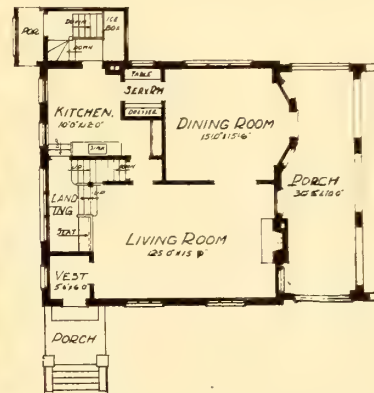


Fig. 4—First floor plan

fireplace. French windows on either side of the fireplace open direct to the living-porch. The dining-room and the kitchen and its dependencies occupy the remainder of the first floor.

There are three bedrooms and two bathrooms on the second floor, and a servant's bedroom over the kitchen, with a private stairway to the first floor.

Mr. Arthur G. Brown, of Chicago was the architect.

The house presented in Figs. 14, 15, 16 and 17, and built for Mr. Harry A.

Peters at Glencoe, Ill., lays no claim to any particular style of architecture, yet it is sufficiently developed in a style of its own to be thoroughly artistic and perfect in harmony, and its general appearance is the result of a very careful study of the house itself and the site on which it



Fig. 7—A stucco house with a thatched roof effect

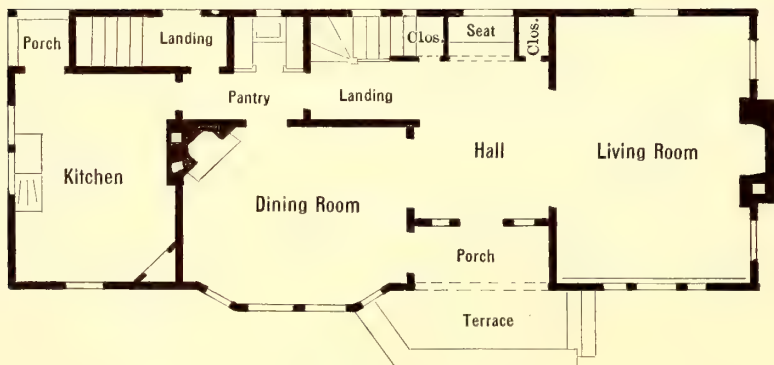


Fig. 8—First floor plan

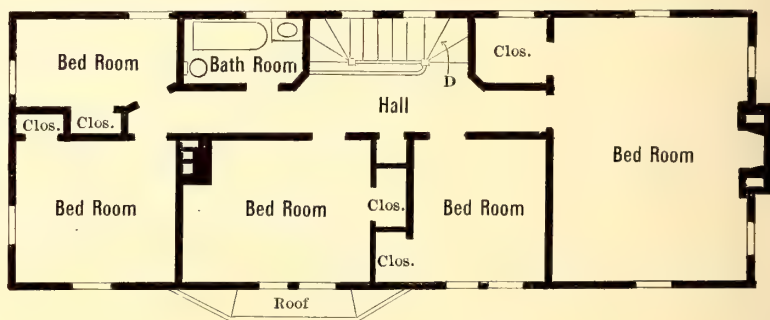


Fig. 9—Second floor plan

was erected. The house is unusual in the material of which it is built, and is a fine example of a new form of exterior treatment.

The foundation is constructed of stone up to the level of the grade line, from which the building proper is constructed. The exterior framework is covered with matched sheathing and building paper. This paper, from the grade line to the level of the second story window sills, is covered with matched boards with their surface



Fig. 10—The living-room

left as they come from the mill. The joints where the boarding is joined is covered with a narrow strip of similar material, forming a ribbed effect. This entire woodwork is stained and finished in a soft brown tone. The remainder of the building is covered with beams, forming panels which are filled in with cement stucco of a light gray color, and harmonizing with the soft brown tone of the beams and the moss green tone of the shingled roof.

The house has been planned with a view to face the street broadside, as shown in the engravings, so that each one of the living-rooms may have a view of the street, and an outlook entirely independent of each other room in the house, and also of the houses adjoining the property. A terrace is built along the front of the house, with a simple hood over the entrance door, which provides protection in inclement weather. By the building of this terrace across the front of the building an opportunity is afforded of spreading an awning over it in summer when desired, and at the same time precluding any possibility of darkening the interior rooms when not in use. The main living-porch, or loggia, is built off the dining-room and is enclosed with screens in summer and glass in winter, and is used as an all-year-around room. In summer it is used for dining purposes. This is an interesting adjunct to the modern suburban house and is one that costs no more than if a piazza had been built in the regular way, as is usually the case with the small suburban house.

The hall, with its broad window seat, is not a mere passageway, but is a room which provides ample space for proper and convenient furnishing. There is only one flight of stairs, but this is so arranged that one can reach the second story from the kitchen without being observed from the rest of the house, and by this means it not only reduces the expense of the extra stairway and the space required for it, but it also eliminates the time taken in the care of it. The hall is trimmed with cypress and is stained and finished in a soft brown



Fig. 11—A stucco house of good proportions

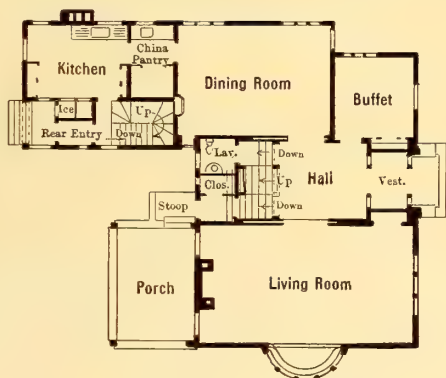


Fig. 12—First floor plan

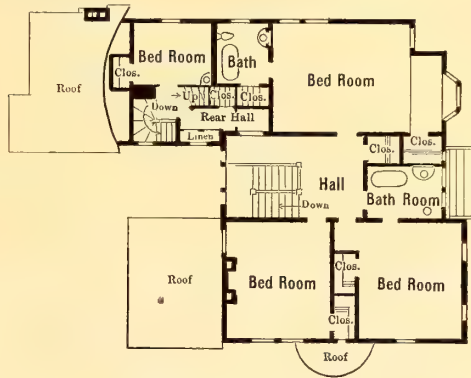


Fig. 13—Second floor plan



Fig. 14—The fire place in the living-room

tone. To the right of the hall is built the living-room, which occupies the remainder of the front of the house. It is trimmed and finished the same as the hall. A bay window at the front of the room is provided with a broad window seat, over which is built a cluster of windows. Opposite this window seat is the open fireplace, which is built of Colonial brick. The facings are of similar brick laid up with red mortar and with the joints raked out in order to form a shadow. A simple wooden shelf is provided, over which there is placed a panel representing a rural landscape scene. The walls of the room have battens placed on them at different intervals apart, forming panels which are covered with a stenciled paper in a tone of green. The dining-room, opening from the living-room, is also trimmed with cypress and stained and finished the same as the rest of the main floor. The walls are tinted a mustard yellow. A feature of this floor is that all the principal rooms are so arranged that they can be thrown together when desired.

The second story plan provides the sleeping rooms, which are well arranged in regard to each other and to the hall and the bathroom. This floor is treated with enamel paint for the trim, while the walls of each room are treated in one color scheme. The bathroom has a tiled floor and wainscoting, and is furnished with porcelain fixtures and exposed nickel-plated plumbing. There is provision made for one servant's room on the third floor. The latter is well spaced and well lighted, and has plenty of storage room.

Messrs. Spencer and Power, of Chicago, Ill., were the architects of this interesting house.

The uppermost thought in the minds of the architects in designing and planning the group of houses illustrated in the engravings presented herewith, was to combine in each one of them the essential characteristics which go to make a house distinctive, and at the same time meet all the necessary requirements of the family who are to live in it.

A study of the plan of each of these houses will show that they have been planned with this view in mind.

The architects, as well as the promoters of large suburban and country properties, have come to realize that there are a great number of small families of moderate means, who have the refinement and good taste to appreciate an artistic and distinctive house; and are now putting their best efforts forward to meet this demand.

There are now greater possibilities and an unlimited scope in the building of a modern house, for the reason that there are a large number of materials which can be used in the construction of a home. Every known type of wooden construction, as well as brick and cement are now used, particularly cement, and each one of the houses shown are built partly of cement, either as a whole or in combination with stone, brick or wood. All of these materials are plastic in the hands of



Fig. 15—An interesting house at Glencoe, Ill.

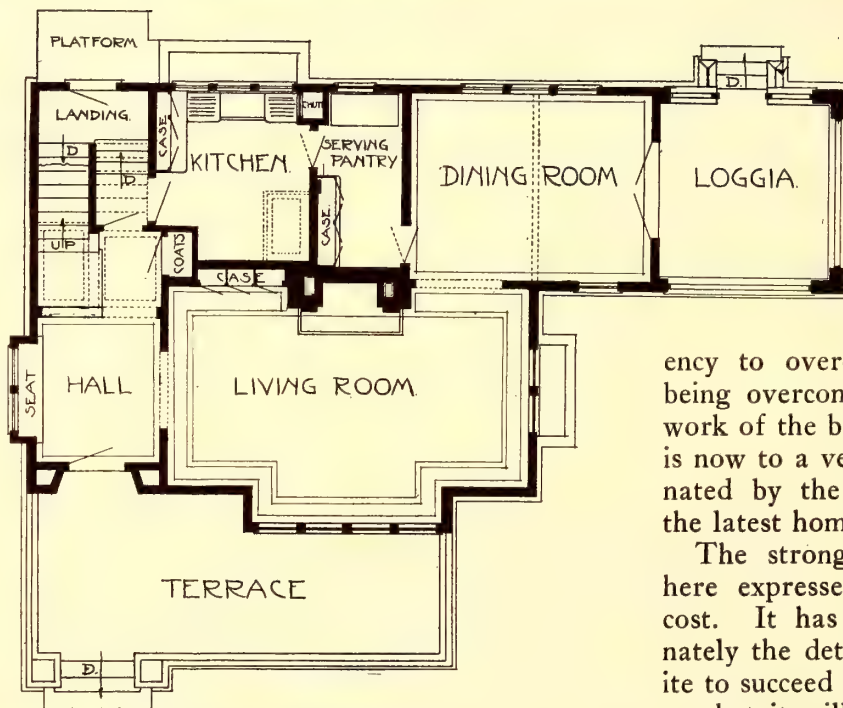


Fig. 16—First floor plan



Fig. 17—Another view of Fig. 15

the designer, and are easily constructed by the builder. Great care should be exercised in the use of these materials, either as a whole or in combination with other materials, and when this is done the results are such as could not be attained in any other way.

Individuality in the designing of a house exterior is quite as essential to the success of an estate as are the planning and furnishing of the interior and the development of the home grounds. The illustrations show how interesting these dwellings are, and they represent the good work being done in recent domestic architecture.

The most dangerous menace in modern building has been the tendency to over-ornamentation, but this is being overcome by a closer study of the work of the best firms in architecture, and is now to a very large degree being eliminated by the designers and builders of the latest homes.

The strong desire for the artistic is here expressed in the house of modest cost. It has been long felt, but fortunately the determination of the suburbanite to succeed in having his home designed so that it will be tastefully executed and

broadly distinguishable from his neighbors' residence is now easily accomplished. It is expected that these houses will furnish numerous and essential features of form and plan to that end.

We have shown some of the possibilities, and by a wise and sufficient exercise of judgment there is no reason why he should fail in having around him developments such or as fair as these here selected and illustrated.

Garden Notes

Conducted by Charles Downing Lay



A PUBLIC spirited citizen in a small Rhode Island town writes to the editor of "Garden Notes" for advice about their old cemetery, which is now, he says, "in a distressing state, with overturned stones on which the inscriptions are half obliterated, tangles of all sorts of bushes, innumerable weeds, fallen trees and holes where stones have been dug out. The fences are falling down, happily some of the iron ones are broken beyond repair."

It may be that the village improvement society in your town will take hold of it as was done in Ridgefield. The conditions there were somewhat as you describe when money was raised to put the cemetery in order, and now it is in a pleasing state of upkeep. I quote from the report on that cemetery:

"It is unnecessary to recite the details of disorder and neglect which I have found in the old cemetery in Ridgefield.

"They are as apparent and perhaps as distressing to everyone as they are to me, and need not be considered in this report, except as a particular disorder calls for radical changes.

"The care of old burying grounds is becoming a problem in many communities. Few interments are made in them now, either because the lots are filled or because the families which owned them have died out or have moved away.

"There are no funds for their maintenance as in the modern, privately owned cemeteries, and each lot is supposed to be taken care of by its owner; an erroneous supposition as the forlorn state of many of the lots shows.

"Their future is in doubt. They are not consecrated ground to be used over and over as in England, and once filled their only use is as memorials to the dead.

"It does not seem right or necessary to turn them into public parks, yet they should have some aesthetic and intellectual value to the living.

"A decent respect for the dead would suggest that they be made as beautiful as possible, and that they be kept always as places for quiet communion with the past.

"The headstones in the oldest part of the cemetery should be preserved as long as may be, but when the inscriptions become effaced by time, no attempt should be made to recut them, but they should be taken away. In the course of another hundred years perhaps there will be no stones left and the old part of the cemetery will give ample space for the memorial services of whatever kind that take place there.

"The records of the stones are, of course, valuable and should be preserved by rubbings kept in the town hall or library. A careful map of the cemetery with each grave marked and numbered to correspond with the number of its rubbing would be a further means of identification. When this is done the stones themselves are not so important. They are less durable than the rubbings.

"The next important work is removing the mounds over graves which have no stones remaining, and filling holes where rocks have been taken out. This means a general tidying up and after that the old trees should be gone over, cutting out the dead wood and filling holes that are not too large; then the planting can be undertaken.

"If any of the lots are abandoned they might be planted as samples, or permission might be obtained from owners to plant their lots according to the schemes of the society. Thus there might be sample lots showing in a general way what would be done for a fixed sum. This would help lot owners to decide about planting their own lots—which they might in the end be glad to have the improvement society do.

"My idea in planting the old part of the cemetery is that the place should be shady but not gloomy. More trees, mostly oaks and a few white pines and white birches, should be planted far enough apart to grow as individuals.

"There should also be many dog woods, silver bell trees, shad bush, white fringe and red cedars scattered about. All these are permanent trees, which will be in their prime long after this and the next generation or two have passed.

"Nowhere should the trees be thick and nowhere do we want a tangle of trees and shrubs.

"Myrtle can be grown in patches and lily of the valley and the poets narcissus and other spring bulbs can be scattered on the knolls. English ivy and the evergreen *Enonymus* can be planted on the old trees. For shrubs I should recommend only the broad-leaved evergreens which grow slowly and last many years: *Andromeda*, *rhododendrons* in three hardly varieties, *laurel*, *leiophyllum*, etc., planted singly or in groups of two or three as the space may warrant.

"Fifty dollars spent every year in this way for planting would soon change the appearance of the place so that in time it would become one of the real beauties of the town instead of an eye sore as it now is.

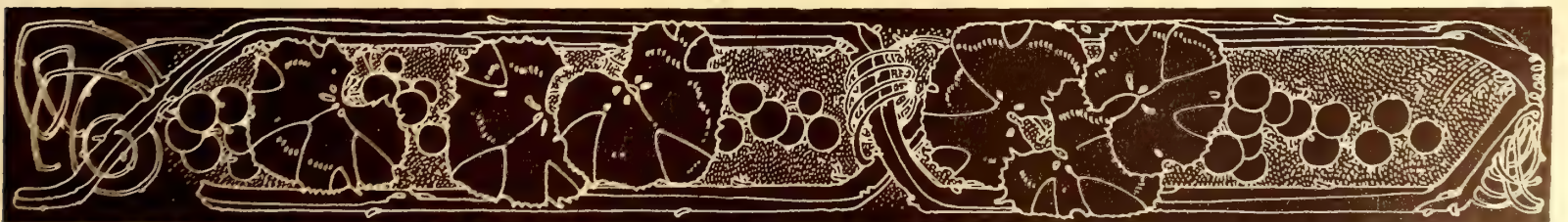
"There is no waste in planting of this sort and it is lasting and cheap to maintain, though the first cost may be great."

The iron fences around lots had better be thrown away and the boundary fences of the cemetery rebuilt.

A good stone wall is always one of the nicest and most durable of fences, particularly if it be laid on a good foundation and of course if it be laid in cement mortar it should last forever.

It would be a great pity to make a grand splurge with an expensive fence and not to have enough money left to improve and maintain the grounds inside—a simple fence with the most perfect maintenance inside would be better.

Rubbings are made on rather thin manila wrapping paper, which is laid on top of the stone. The paper is then blackened all over with a wax marking crayon. Letters cut in the stone show white on a black background.



The Heliotrope as a Bedding Plant

By Ida D. Bennett



FOR carpet bedding, a low border between lots or an encircling strip of color outlining the flower garden, there is no finer plant than the heliotrope. It gives exquisite color and perfume, together with a luxuriance of foliage unsurpassed by any other plant. It is very largely employed by the park gardeners, where long stretches of it may be seen—a mass of riotous bloom, from late June until frost.

It is a plant which transplants easily and small ones from the florist soon become established and break at once into bloom. It is not, however, a plant which is easily propagated either by cuttings or by seed. The cuttings require special treatment to root readily and for home growing succeed best in shallow boxes of moist sand, covered with glass and placed in a sunny window. The new growth should be selected for cuttings and short lengths—not over two or three inches in lengths used. These may set in the sand in rows and the entire box covered closely with glass, or the cuttings may be set in clusters of three or four and a tumbler turned over them, the rim being pressed into the sand. The resulting close, warm, moist air, which would be injurious to many kinds of plants, seems to suit the heliotrope very well indeed and under these conditions they root readily. If, however, very large drops of water gather on the glass it will be well to remove it for a few moments, as it is possible to overdo the matter. When the plants are rooted and beginning to grow the glass should be removed carefully and by degrees, and for this reason the glass over the entire box is to be preferred, as it can be raised at the lower edge a little—enough to allow surplus moisture to pass off and a desirable amount of fresh air to enter, while at the same time retaining the hot house temperature, so desirable.

Sand furnishes a very satisfactory medium for the growing of most plants and there need be no unnecessary haste in potting off the young plants, better allow them to become

well rooted and then pot them off in small pots—not more than two and a-half inches in diameter—using a fine compost of leaf mold, sharp sand and fibrous loam, and making a hole in the center of the pot of earth sufficient for the roots of the plants, and lining this with the sand from the box and placing the roots therein. This gives practically the same nourishment at the start and allows the plant to become accustomed to a change of diet gradually, which makes for its general welfare.

If cuttings have been struck in March the plants will have filled the pots with earth and been transferred to a size larger before it becomes time to plant out in the open ground, which should not be done before the last of May, or until the soil and nights are warm, for the heliotrope is a tender shrub and easily chilled.

In growing plants from seed the reverse treatment is indicated. Here it is necessary to keep the seed nearly, but not quite dry; too much moisture will infallibly cause the seed to decay, while too little will result in a failure to germinate. To keep the soil just at the point of drying out and never allowing it to do so is the secret of growing heliotropes from seed. Shallow cigar boxes or flats are best suited for the sowing of the seeds, and these should have several holes bored in the bottom, which should be covered with pieces of glass or broken crockery. The soil should be a fine compost and the seed sown on the surface and pressed down with a smooth piece of wood, or other object. A slight covering of fine, white sand should then be sprinkled over the surface—just enough to cover the seed, and this, too, should be pressed down and the whole moistened lightly by shaking over it a whisk broom, dipped in tepid water. The box should then be covered with glass and set in a warm place free from drafts. It must be watched closely to guard against too much or too little moisture. If much mist appears on the glass remove it for a time—there must never be drops of moisture, and if the surface appears dry, water ever so lightly.

When the seedlings are up, give air and moisture as



Heliotrope makes a wonderfully luxuriant growth and is a mass of flowers all summer

needed and place the box in a sunny window, shading slightly by a bit of cheese cloth drawn between the box and the window, and encourage them to grow as rapidly as possible.

Heliotropes in the living-room suffer greatly from too dry an atmosphere. It is almost impossible to have them do well unless showered daily with tepid water, and the young plants especially require a moist atmosphere. For this reason the glass should not be entirely removed and as soon as possible they should be potted off into thumb pots and plunged into a box of wet sand which will produce a moist atmosphere, approximating that of a green-house.

Grown out of doors, heliotropes like a sunny situation and when once established will make a wonderfully luxuriant growth and be a mass of flowers all summer. If one is in a hurry for results one can, sometimes, secure large plants from the benches which will give very quick returns. Quite large plants of heliotrope transplant well if the precaution is taken not to allow the tops to become dry; if one has a water system this is easily arranged by setting the hose to throw a fine spray over the plants during the day, and lacking this convenient arrangement one must do the best they can with a watering pot, spraying the foliage at frequent intervals during the day.

The accompanying illustration is from a bed of such

large plants transplanted into a long bed where they were set about three feet apart, and, in a very short time indeed, had closed up the gap between them and were a wonderful mass of color all summer—such immense sprays of flowers I have seldom seen. The bed being a curved one, only part of it shows.

Where the supply of heliotrope plants is limited for the area to be covered, use may be made of the *ageratum*; this is much used in the city parks and unless one takes especial pains to study the detail of the beds its presence is little noticed, the general effect being that of a solid bed of heliotrope.

There is a great difference in the fragrance of the heliotrope when grown in the open ground, that from seed possessing little if any fragrance, while plants from cuttings owe their chief charm to the delicious odor they furnish. No heliotrope grown in the open air, however, is as fragrant as the same plant grown under green-house conditions. The plants seem to require the close, moist atmosphere to draw out its fragrance. In the lighter, dryer air out of doors it seems diffused and lost.

The white heliotrope is admired by many but lacks the warmth of color of the lavender and purple varieties, and is more desirable for indoor and window box planting than for growing in the open ground.

Vegetable Fountains

By W. R. Gerard



IN THE early part of the last century, the eminent botanist, Dr. Nathaniel Wallich, while exploring the forests that skirt the coast of Martaban in Lower Burmah, discovered a gigantic climbing shrub, of which the wood was exceedingly soft and porous and presented a very peculiar structure. When the stem of this plant, which in some cases measured ten inches in diameter, was divided, or even when the smaller branches were broken, there gushed out a very large quantity of a clear, tasteless and wholesome fluid, which was found by the discoverer to be in common use among the natives for drinking purposes.

In view of this peculiarity, Dr. Wallich, in creating a genus for the reception of the plant, named it *Phytocrene*, a word of Greek derivation meaning "vegetable fountain." This name, so well befitting the vine just mentioned, might, with equal propriety, be applied to certain other productions of the vegetable kingdom, which in one portion or another of the world serve as strange reservoirs to supply man and animals with a liquid suitable for drinking purposes.

In many sections of the forest lands of the southern States, where, during the dry seasons, a man may walk for miles without finding a stream of water or a spring from which to quench his thirst, nature has provided a means of obtaining a supply which is known only to the initiated. Every old hunter carries with him, when going on a long excursion, a small augur, by means of which he can at any moment secure a refreshing drink, as well as water with which to cook. A cottonwood tree or a willow is the well which is tapped by a huntsman, who carefully examines each tree until he finds one that has what a woodsman calls a "vein," which is simply an attenuated protuberance. On

boring into this "vein," a stream of clear liquid will at once flow out; not a stream of sap, by any means, but one of pure water, which is said by huntsmen to be better than the average to be had from ordinary wells.

Another example of such vegetable fountains is afforded by the West African "Musanga," and a curious example, too, because this tree belongs to a family which includes plants that abound in a milky juice, which in the case of the Cow-tree of South America is perfectly wholesome, and, in that of the celebrated "Upas," is of a most poisonous nature. The "Musanga" contains no milk, but, on the contrary, is so gorged with clear, tasteless water, at all times and in all seasons, that when an incision is made in its trunk, and a vessel is placed at its base, more than ten quarts of potable liquid may be collected in twelve hours.

Sierra Leone has its vegetable fountain in a species of *Tetracera*, a climbing shrub found in the hottest, dampest, and most deeply shaded forests, and which owes the name of "Water-tree" given it by the English settlers to the fact that when its stems are cut across they yield a copious supply of clear water that can be used for drinking.

The flora of Brazil includes among its many useful plants a most elegant arborescent grass—a species of bamboo, which attains a height of thirty or forty feet and a diameter of six or more inches. This plant, which is called by the Tapi Indians "Takwarussa," or "big cure," forms almost impenetrable thickets upon hills and mountains and in dry places, and, according to Humboldt, is always a most welcome sight to the hunter, who, upon cutting through its stem below one of the joints, obtains from the younger shoots a copious supply of a clear, pleasant tasting liquid scarcely distinguishable from spring water.

Another South American species of bamboo, growing farther west, has, on account of the same property, re-

ceived from travelers the name of "Water-tree." It was met with by Prof. James Orton in the Napo country of Ecuador, where it is called by the Indians "Huadhuas." According to the Professor the stem of this plant, when cut across, sometimes yields between each joint at least two quarts of pure water, which is used by the Indians as a refreshing beverage.

The Rev. Charles Kingsley, in describing the forests of Trinidad, mentions a "Water-vine" about as thick as a man's arm, which ascends the tallest trees, and which a woodsman, when he observes it, will climb and, with a few blows of his cutlass, will sever as high as he can reach, and again sever some three feet below; and then, lifting the section on high, and throwing his head back, will pour down his throat a pint or more of pure cold water. Mr. Kingsley's description would apply to some of the passion flower vines, which, possessing a remarkably porous internal structure, usually contain a large quantity of water. Some years ago the stem of one of the tropical species under cultivation at the Kew Gardens, upon being cut, yielded nearly a gallon of pure water in less than a minute.

In Australia, much ingenuity is shown in the discovery of water by the natives, who, owing to the death of this beverage in many parts of that country, are often obliged to resort to curious methods of obtaining enough to support life. Even when in desert regions where no water is visible, the native will generally manage to obtain sufficient to supply his necessities from the roots of certain Eucalypti, which, being very tall, can be seen from a great distance. Having sighted a group of these and reached it, often after traveling several miles, he proceeds to clear away the earth with his "katta," or digging stick, so as to expose the roots. Then tearing the latter out of the ground, he cuts them into pieces of about a foot in length and stands each piece upright in a bark vessel that he usually carries with him, and patiently waits. Presently a few drops of liquid ooze out from the bottom of the pieces of root, and in a short time the water pours out so freely that an abundant supply of it is obtained.

The genus "Adansonia" is represented in northwestern Australia by the "Gonty Stem Tree," the wood of which is exceedingly soft and contains in its pores a certain quantity of water, which is easily extracted by pressure, and, to travelers in the dry sandy plains upon which the tree grows, affords a most grateful beverage.

One of the most beautiful, remarkable and useful plants peculiar to Madagascar is the "Traveler's Tree." By the natives it is called "Ravinala," a word meaning "leaf of the forest," as if it were the leaf by which the forest is characterized—this, indeed, being the fact where the plant abounds. This tree, which belongs to the same family as the banana and plantain, has a thick stem from the center of which proceed broad leaves from four to six feet in length that rise in two rows on stalks six to eight feet long. The tree has long been celebrated for storing, even during the most arid season, a large quantity of water, which is so cool, pure and sweet that the natives when at work in the vicinity never take the trouble to seek a stream, but draw off and drink the liquid afforded by the plant. There is a kind of natural cistern at the base of the stalk of each leaf, and the water which has been collected upon the broad and ribbed surface of the latter flows down a gutter on the upper side of the stalk into this reservoir, where, during the dry season, it supplies nourishment to the tree and refreshment to the traveler and laborer.

The "Silk-cotton Tree" (Ceiba) of Brazil likewise stores up a large quantity of water. "Some of these trees," says an old writer, "are hollow, and from the liberal skies receive such plenty of water that they are hospitable entertainers of thousands in that thirsty region. Once I have known three or four thousand to remain at one of those

trees, and thence receive their watery provision for twenty-four hours and not yet empty it. I think some one tree holds forty ton of water."

Some of the West Indian and South and Central American species of Tillandsia, called "Wild Pines," with leaves sometimes three and a half feet long, constitute large reservoirs for rain water. This, flowing down the sides of the stiff channeled leaves, collects in the reservoir in quantities of from a pint to a quart, and affords thirsty travelers a refreshing beverage. "When we find these pines," says Captain Dampier, the buccaneer, "we stick our knives into the leaves just above the root, and that lets out the water, which we catch in our hats, as I have done many times to my great relief."

On the high plains of Mexico, where water is scarce, the "Hedge-hog Thistles" (Echinocacti) and the "Torch Thistles" (Cerei), when young supply drink to numerous herds of cattle and half-wild horses. The watery juice of these plants is eagerly sought by such animals, and is highly valued by the Indians, too, for its cooling and refreshing qualities. Travelers passing through the cactus wastes of the southwest, often, in order to allay their thirst, resort to the "Hedge-hog Cactus," the interior of which contains a substance full of water, which, extracted by chewing, proves very refreshing. It is owing to this capacity for storing water that some of the Cacti have been called "Vegetable Fountains in the Desert."

Most of the plants belonging to the Sponge family have a milky juice which is more or less acid and poisonous. Yet the botanist Berthelot states that the shepherds of Teneriffe, when thirsty, remove the bark of a cactus-like species growing in the arid, rocky districts of the island, and quaff the watery juice that abounds in the inner portion of the stem.

According to the Spanish botanists Ruiz and Puon, the seeds of the "Ivory Palm," which, when ripe, constitute the ivory nuts of commerce, are, when young, filled with a clear tasteless fluid with which travelers are accustomed to allay their thirst. Owing to the size of the seed and the number (six to nine) on each fruit, the quantity of fluid yielded by each plant is sufficient to supply the needs of a number of persons.

The plains of South Africa are great wildernesses of sand that are exposed to droughts of long duration. Yet even during these there exist vegetable water sources beneath the surface. Livingstone mentions a plant of which the root proves a genuine blessing to the inhabitants of the Desert of Kalahari under such circumstances. This plant, called by the natives "Leroshua," is provided, at a foot or more beneath the surface, with a tuber as large as a child's head.

When the rind of this is removed, the interior of the tuber is found to consist of a mass of cellular tissue filled with fluid which is deliciously cool and refreshing. A similar plant, says, the same author, is found in the Mopane country, where long-continued heat parches the soil. This plant, called "Mokuri," is provided with a number of tubers as large as a man's head, which, like the one above mentioned, are filled with a refreshing liquid with which the natives slake their thirst.

We have some examples of vegetable water reservoirs on our own continent. Thus, for example, to the Pah Ute Indians, when on their hunting excursions, drink is afforded by the white and watery portions of a species of broomrape, which grows in the sandy soil of the western plains. Farther south, in the sandy desert of Sonora, nature has provided as a source of both drink and food for man a curious parasitic plant, the Ammobroma Sonoræ, which grows deep in the sand. This plant contains in its tissues a certain amount of water which is sought by both the whites and Indians when they become thirsty in traveling.



CORRESPONDENCE



The Editor of *American Homes and Gardens* desires to extend an invitation to all its readers to send to the Correspondence Department inquiries on any matter pertaining to the decorating and furnishing of the home and to the developing of the home grounds.

All letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this Department.

Problems in Home Furnishing

CRETONNE BED SPREADS

A CORRESPONDENT living in Wilmington, Delaware, has had her attention called to bed spreads. "I have always used white Marseilles spreads and tucked them inside of the wooden rail. Lately, I have noticed that cretonne and chintz are made into spreads and, on the metal beds, they hang over the rail. I am fitting up a guest room in a very unexpensive way, and would like your advice about spreads for the two single iron beds. The wall-paper is printed in two tones of light yellow. The windows are both to the north, so I am using a madras in yellow and white for the curtains. The rugs (as suggested some time ago in your correspondence department) are placed at the sides and foot of the beds. They are mixed colors with green predominating. The dressing table is a home-made affair with a mirror framed in white enamel. There is a chiffonier and night stand of white enamel, and a willow rocker like the one illustrated in your June article on Decorations and Furnishings for the Home, page 229. Would it be better in this room to keep the beds with white spreads? Or shall I have cretonne?"—A. E.

The color scheme of this room is excellent as far as it has been carried. Cretonne on the beds and also for a valance for the dressing table and a cover for the rocker cushion will further the good effect, if the right selection is made. Yellow poppies with green leaves printed on a cream-white ground should not be a difficult pattern to find. A valance may be attached to each bed and the spread allowed to hang over the top a few inches. One width should make the center of the spread, with a half width sewed on each side. A separate cover is usually made to lay over the pillows. The edge may be finished with a hem an inch and a-half wide.

WALL-PAPERS FOR AN OLD FARM-HOUSE

"The remodeling of an old house in Massachusetts has necessitated changing the wall-papers," writes Mrs. K. S. H. "While we cannot dignify the place by calling it Colonial, it dates to the early years of the Nineteenth Century, and has much of the simplicity of early times. The hall runs through the center of the house, with a sitting-room on one side and a dining-room on the other. Upstairs on the second floor there are four chambers and we are introducing two bathrooms. Besides giving some ideas for the wall-papers, will you tell me what to do with the floors to make them in keeping with the rest of the house. Could I use white muslin curtains in the living-rooms? Another disturbing question is the stairway. Shall this be carpeted?"

If the floors are in condition to be treated to floor paint, the halls, sitting- and dining-rooms may be covered with yellow paint, and a warm gray used in the bedrooms and bathrooms. If this plan is impractical,

green ingrain filling may be laid over the first floor, with the same material in gray for the bedrooms. The color scheme for the dining- and sitting-room may combine yellow (or tan) with green and blue, for the bedrooms, the chintz papers, combining a variety of colors in small patterns, may be chosen. The hall throughout may have a gray foliage or picture paper. The stairs will look better laid with a two-toned green carpet in Brussels or velvet than left uncovered.

The sitting-room walls may be covered with a light green oatmeal paper, and the dining-room decoration may be a gray paper with the pattern printed in blue and green. If the bathroom walls are to be covered, the new sanitary materials printed like a texture would be a good choice.

The question of muslin curtains throughout the house may be determined by the outlay to be made for this item. It would be preferable to use a white grenadine embroidered in a lattice design in the living-rooms and hall, with the cheaper muslin for the bedrooms.

LIGHTING FIXTURES

The renewing of the lighting fixtures in a Pennsylvania home has brought up some questions as to modern treatment for this department of household art. "We intend to use only electricity, and have begun to look over some catalogues of fixtures. We are very much puzzled, and would like some help in deciding certain points. The ceilings throughout the house are nine feet high. Shall we have chandeliers in all of the living-rooms? For the dining-room I would like to use candles with pretty shades, but do not wish to be entirely dependent on this light. Still, I do not care for the drop light over the table. Then the hall light on the first floor is another problem. Should a lantern be used in the hall or a chandelier? Or, would side-lights be satisfactory? We have decided to have the dull or old brass finish throughout the house."—S. E. R., Altoona, Pa.

As the lighting fixtures are a permanent feature for both decoration and utility, their selection should be made with great care. Usually, in the large stores, samples are shown, and a better understanding of their construction is reached than from the illustrations of a catalogue.

Chandeliers are not used now for electricity, but groups of two, three or more lights are suspended from a centerpiece which is attached close to the ceiling. In the dining-room this ceiling light could take the place of candles, when the latter were not in use. Side lights should also be installed in the dining-room. In the other living-rooms on the first floor, side lights could be used without ceiling lights, with sockets for attaching a drop light let into the baseboard. Both ceiling lights and lanterns are suitable for the hall, the choice between the two depending on the space to be illuminated and the furnishings. Some of the newest ceiling lights for the hall resemble bell-shaped flowers in amber-toned shades.

Garden Work About the Home

S. B. A., Norwich, asks for a list of the best peonies.

The best peonies are difficult to name, because all peonies are good and the enthusiast would like to have all varieties. The following are good and will provide continuous bloom for about three weeks.

Single Japanese in several varieties.

Peony officinalis in several varieties.

Tree peonies (*P. Moutan*) get to be large bushes. They are earlier than the Chinese peonies and are mostly pink, either single or double.

Chinese Peonies.

Ambroise Verschaffelt, crimson, full fragrant.

Beaute Francais, pink, fragrant, early.

Bernard Palissy, white, full, fragrant.

Charlemagne, white, very double, fragrant.

Couronne d'Or, yellow, white, double, very late.

De Candolle, red, large.

Delicatissima, rose, large, fragrant.

Edulis, violet rose, full, fragrant.

Eugene Verdier, bluish, large, fragrant.

Festive maxima, large, white, early.

Henri Laurent, rosy pink, fragrant, late.

Humei, purple rose, one of the latest.

Louis Van Houtte, crimson, full, fragrant.

These are all good and safe to start with. Any nursery catalogue will give a hundred varieties by name and although the descriptions seem alike the flowers are quite distinct in color or fullness or time of blooming and all are desirable.

Peonies can be raised from seed which should be sown in the boxes as soon as it ripens. It will take some years, however, for the plant to get large enough to flower.

Transplanting should be done in September. If it is done in the spring there will be little bloom that year.

Another correspondent (B. P. Boxwood) asks for a list of lilacs to provide a succession of bloom, and to use in a tall hedge to screen some unsightly buildings.

He also wishes the names of the best new hybrids.

The following are all good lilacs.

Syringa pubescens, purple flowers, very fragrant.

S. persica, Persian lilac, small leaves, purple flowers, one of the smallest plants.

S. rothomagensis, Rouen Lilac, reddish flowers in large panicles.

S. Pekinensis Chinese Lilac, cream white flowers.

S. Josikaea, Josdika's Lilac, dark shining leaves and purple flowers in June.

S. villosa, flowers purple, changing to white.

S. Japonica, Tree lilac, dark green glossy foliage, white odorless flowers. The last to bloom.



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of a pint of sugar. But in a cold, wet season the pint of sugar for the pint of juice must be measured generously.

Another cause of the jelly crystalizing is hard boiling. When the syrup boils so rapidly that particles of it are thrown on the upper part of the sides of the preserving kettle they often form crystals. If these crystals are stirred into the syrup they are apt to cause the mass to crystalize in time.

The use of the syrup gage and the care not to boil the syrup too violently would do away with all uncertainty in jelly making. The syrup gage should register 25 deg. no matter what kind of fruit is used.

Jellies should be covered closely and kept in a cool, dry, dark place.

Currant Jelly.

The simplest method of making currant jelly is perhaps the following: Free the currants from leaves and large stems. Put them in the preserving kettle; crush a few with a wooden vegetable masher or spoon; heat slowly, stirring frequently.

When the currants are hot, crush them with the vegetable masher. Put a hair sieve or strainer over a large bowl; over this spread a double square of cheesecloth. Turn the crushed fruit and juice into the cheesecloth, and let it drain as long as it drips, but do not use pressure. To hasten the process take the corners of the straining cloth firmly in the hands and lift from the sieve; move the contents by raising one side of the cloth and then the other. After this put the cloth over another bowl. Twist the ends together and press out as much juice as possible. This juice may be used to make a second quality of jelly.

The clear juice may be made into jelly at once, or it may be strained through a flannel bag. In any case, the method of making the jelly is the same.

Measure the juice, and put it in a clean preserving kettle. For every pint of juice add a pint of granulated sugar.

Stir until the sugar is dissolved, then place over the fire; watch closely, and when it boils draw it back and skim; put over the fire again, and boil and skim once more; boil and skim a third time; then pour into hot glasses taken from the pan of water on the stove and set on a board. Place the board near a sunny window in a room where there is no dust. It is a great protection and advantage to have sheets of glass to lay on top of the tumblers. As soon as the jelly is set cover by one of the three methods given.

To make very transparent currant jelly, heat, crush, and strain the currants as directed in the simplest process. Put the strained juice in the flannel bag and let it drain through. Measure the juice and sugar, pint for pint, and finish as directed above.

To make currant jelly by the cold process follow the first rule for jelly as far as dissolving the sugar in the strained juice. Fill warm, sterilized glasses with this. Place the glasses on a board and put the board by a sunny window. Cover with sheets of glass and keep by the window until the jelly is set. The jelly will be more transparent if the juice is strained through the flannel bag. Jelly made by the cold process is more delicate than that made by boiling, but it does not keep quite so well.

Raspberry and Currant Jelly.

Make the same as currant jelly, using half currants and half raspberries.

Raspberry Jelly.

Make the same as currant jelly.

Blackberry Jelly.

Make the same as currant jelly.

(Continued on page xii)

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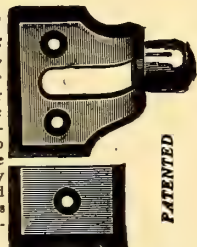
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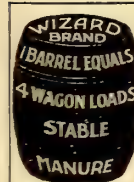
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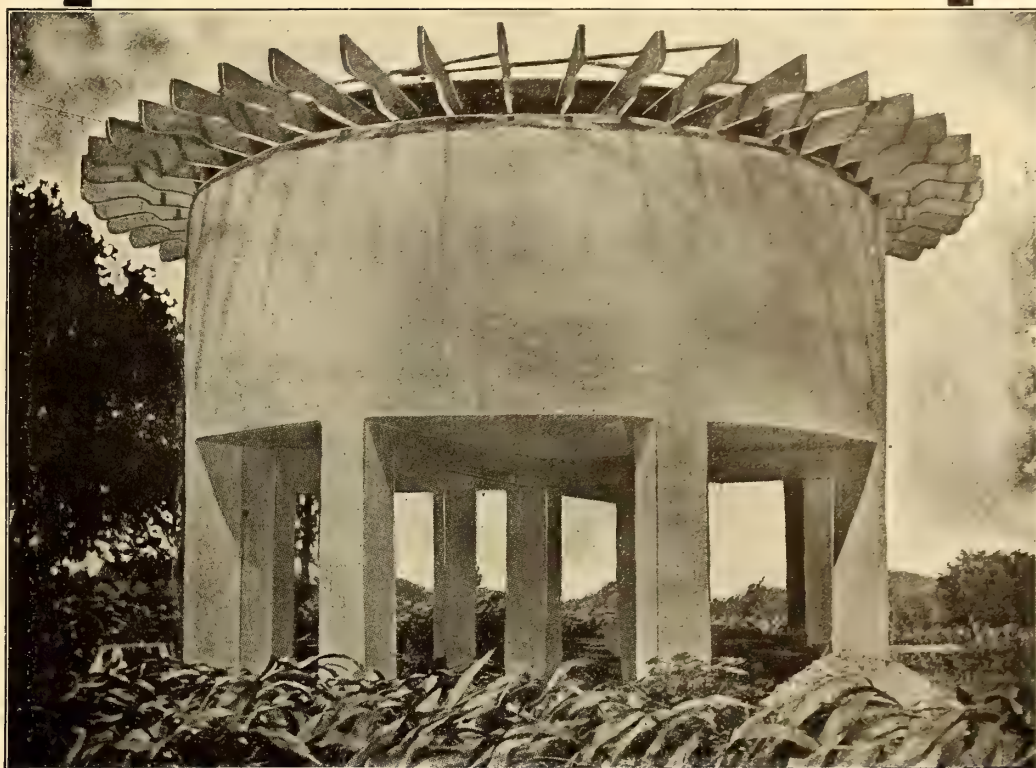
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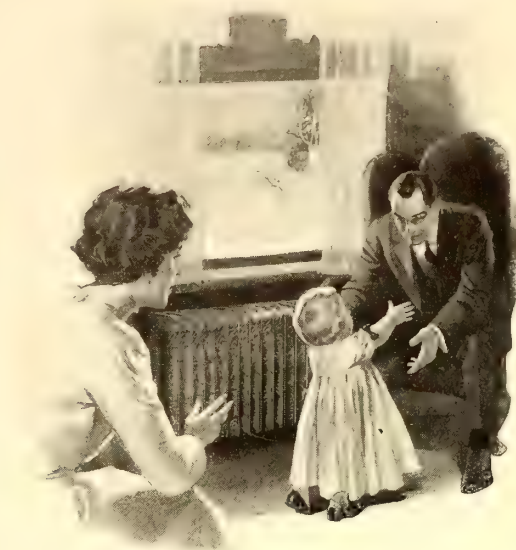
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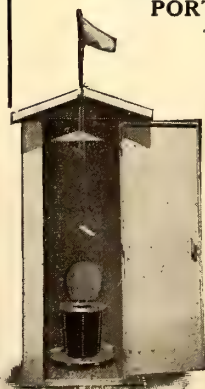
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Strawberry Jelly.

To ten quarts of strawberries add two quarts of currants and proceed as for currant jelly, but boil fifteen minutes.

Ripe-Grape Jelly.

An acid grape is best for this jelly. The sweet, ripe grapes contain too much sugar. Half-ripe fruit, or equal portions of nearly ripe and green grapes, will also be found satisfactory. Wild grapes make delicious jelly. Make the same as currant jelly.

Green-Grape Jelly.

Make the same as apple jelly.

Plum Jelly.

Use an under-ripe acid plum. Wash the fruit and remove the stems. Put into the preserving kettle with a quart of water for each peck of fruit. Cook gently until the plums are boiled to pieces. Strain the juice and proceed the same as for currant jelly.

Apple Jelly.

Wash, stem, and wipe the apples, being careful to clean the blossom end thoroughly. Cut into quarters and put into the preserving kettle. Barely cover with cold water (about four quarts of water to eight of apples) and cook gently until the apples are soft and clear. Strain the juice and proceed as for currant jelly. There should be but three quarts of juice from eight quarts of apples and four of water.

Apples vary in the percentage of sugar and acid they contain. A fine-flavored acid apple should be employed when possible. Apple jelly may be made at any time of the year, but winter apples are best and should be used when in their prime, i. e., from the fall to December or January. When it is found necessary to make apple jelly in the spring, add the juice of one lemon to every pint of apple juice.

Cider Apple Jelly.

Make the same as plain apple jelly, but covering the apples with cider instead of water. The cider must be fresh from the press.

Crab-Apple Jelly.

Make the same as plain apple jelly.

Quince Jelly.

Rub the quinces with a coarse crash towel; cut out the blossom end. Wash the fruit and pare it and cut in quarters. Cut out the cores, putting them in a dish by themselves. Have a large bowl half full of water; drop the perfect pieces of fruit into this bowl. Put the parings and imperfect parts, cut very fine, into the preserving kettle. Add a quart of water to every two quarts of fruit and paring. Put on the fire and cook gently for two hours. Strain and finish the same as apple jelly. The perfect fruit may be preserved or canned.

To make quince jelly of a second quality, when the parings and fruit are put on to cook put the cores into another kettle and cover them generously with water and cook two hours. After all the juice has been drained from the parings and fruit, put what remains into the preserving kettle with the cores. Mix well and turn into the straining cloth. Press all the juice possible from this mixture. Put the juice in the preserving kettle with a pint of sugar to a pint of juice; boil ten minutes.

Wild Fruits for Jellies.

Wild raspberries, blackberries, barberries, grapes, and beach plums all make delicious jellies. The frequent failures in making barberry jelly come from the fruit not being fresh or from being overripe.

Preparation of the Glasses for Jelly

Sterilize the glasses; take from the boiling water and set them in a shallow baking pan in which there is about 2 inches of boiling water.

(To be continued)



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BOOK REVIEWS

SIMON THE JESTER. By William J. Locke. New York: John Lane Co.

Suppose that your doctor told you that you had but six months to live; that you were naturally of a sanguine disposition; that you were even benevolently inclined. What course would you adopt? This is the problem which Mr. William Locke has endeavored to solve in the latest of his nervously, and even impudently written novels. Mr. Locke's hero is given enough to occupy his mind without worrying about an early death. His attempts to win away a friend of his from the attractions of a woman whose influence he considers to be decidedly for the worse, his own ultimate subjugation to the woman's charms, his complete cure by an operation at the end of the period of six months, certainly add complexities that afford abundant opportunity for Mr. Locke's witty imagination. Some of Simon's troubles are removed by marrying the woman and by taking up work in the East End.

Like most of Mr. Locke's novels, the charm of the story resides more in the captivating vein in which it is written rather than in the denouement itself, for it must be confessed that as a weaver of plots, Mr. Locke is not nearly so successful. Even as a piece of writing, however, the book falls short of *The Beloved Vagabond* and *Septimus*.

CONCRETE FROM SAND MOLDS.—By A. A. Houghton. New York: The Norman W. Henley Publishing Co., 1910. 16mo. 145 pages; fully illustrated. Price, \$2.00.

In this little book Mr. Houghton has given a simply worded, thorough description of casting ornamental concrete objects from sand molds. In the rapidly widening use of cement and concrete, the lack of skilled workmen really competent to handle this new and plastic material renders the publication of such a book timely. The instructions given are so clear that any man of reasonable intelligence and skill ought to be able to make sculptural objects if he follows them. The book does not presuppose any preliminary knowledge on the part of the reader. It assumes that the reader is entirely unacquainted with the principles of concrete casting, for which reason it should find favor with those to whom concrete and its many possibilities are new.

PROBLEMS IN WOOD TURNING. By Fred D. Crawshaw, B.S., M.E. Peoria, Ill.: The Manual Arts Press, 1909. 12mo. Price, 80 cents.

Wood turning is considerable of an art, requiring quite a little knack of handling the tools. The present work is an extremely practical one, and the illustrations are the best we have ever seen in a book on wood turning. The various projects are admirably worked out.

POWER, HEATING AND VENTILATION. A Treatise for Designing and Constructing Engineers, Architects and Students. By Charles L. Hubbard, B.S., M.E. Part II, Power and Lighting. First edition. Brattleboro, Vt.: The Technical Press, 1909. 8vo.; pp. 397. Price, \$2.

The author has produced a thoroughly practical book which will be warmly welcomed by all engineers who have charge of power and lighting plants. There is always room for a good book on this subject, and the author has certainly produced a most admirable treatise which is worthy of a large sale.

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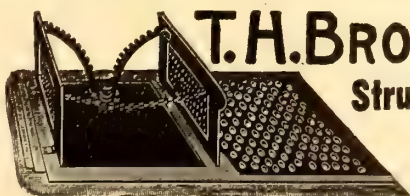
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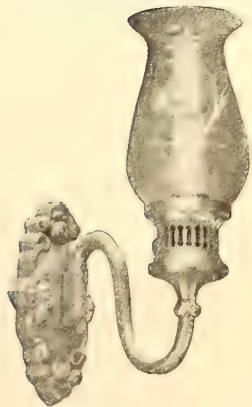
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BOOK REVIEWS (Continued)

SIMPLIFIED MECHANICAL PERSPECTIVE. By Frank Forrest Frederick. Peoria, Ill.: The Manual Arts Press, 1908-1909. 8vo.; 54 pp. Price, 75 cents.

This is a treatise for the use of high schools, technical and manual training high schools, evening and industrial schools, and all schools. The author has used the methods outlined for more than twenty years, and he states that he has never had a student learn much about the subject unless he carefully worked each problem and thoroughly understood it before attempting the next. The problems are admirable, and a thorough mastering of this work will give anyone an excellent idea of perspective.

DOCKHAM'S AMERICAN REPORT AND DIRECTORY OF THE TEXTILE MANUFACTURE AND DRY GOODS TRADE. Boston: Dockham Publishing Company, 1909. Quarto; 642 pp. Price, \$6.

This is the twenty-second edition of the forty-third year of this most valuable publication. There is no subject more difficult to deal with than the question of textile manufacture, and this is the only book which will solve many of the difficulties. It has many excellent points, such as statistics on the looms in the United States, the number of cotton spindles, sets of wool cards, worsted combs, etc. There is also a list of textile manufacturers arranged alphabetically by States, including Canada and Mexico also. There are separate lists for bleacheries, cotton dealers, cotton goods manufacturers, wholesale dry goods, dryers, finishers and mercerizers, exporters, importers, print works, wool dealers, wool-hat manufacturers, and yarn dealers.

LIGHT. By Richard C. Maclaurin, President of the Massachusetts Institute of Technology. New York: Published by the Columbia University Press, 1909. Price, \$1.50.

During the winter of 1908-9 Dr. Maclaurin delivered a series of ten lectures before the American Museum of Natural History, on the salient features of the modern theory of light. Written primarily for the intelligent man who lays no claim to scientific knowledge, but wishes to keep abreast of the scientific times, this book serves admirably to show how wonderfully the modern theories suit the facts down to the minutest numerical detail. The subjects treated are the following: Early Contributions to Optical Theory, Color Vision and Color Photography, Dispersion and Absorption, Spectroscopy, Polarization, The Laws of Reflection and Refraction, The Principle of Interference, Crystals, Diffraction, and Light and Electricity.

THE STORY OF DUTCH PAINTING. By Charles H. Claffin. New York: The Century Company, 1909. Square 8vo.; pp. 220. Price, \$1.20 net.

The tale of how the Dutchman of the seventeenth century developed a new school of painting is a part of the story of the lives and fortunes of the Dutch people; and to know something of the latter helps to appreciation of what these Dutch painters tried to do, and how they succeeded. Mr. Claffin tells what the principal Dutch artists accomplished in portraiture, in landscape, and in the representation of the indoor and outdoor life of the people, why they chose these subjects, and why they treated them as they did. The result is a complete and readable handbook of Dutch art, equally appealing to wide-awake young people and to adult students of art. The reproductions of notable Dutch paintings add to the volume's value and interest.

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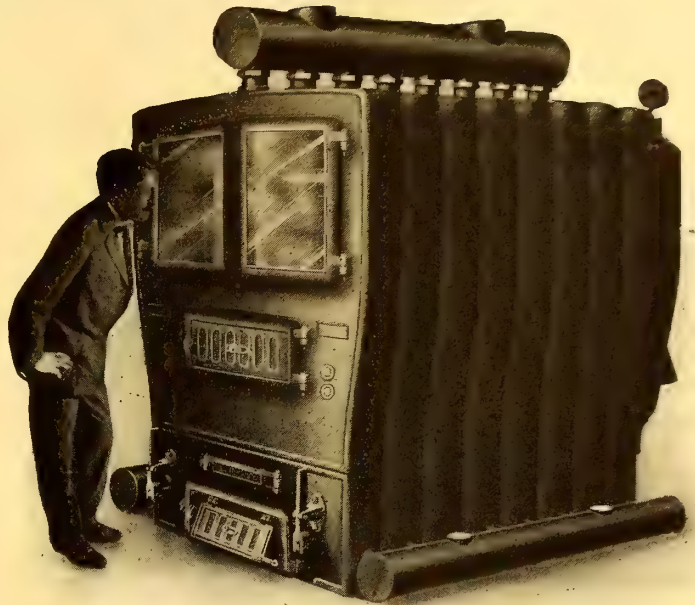
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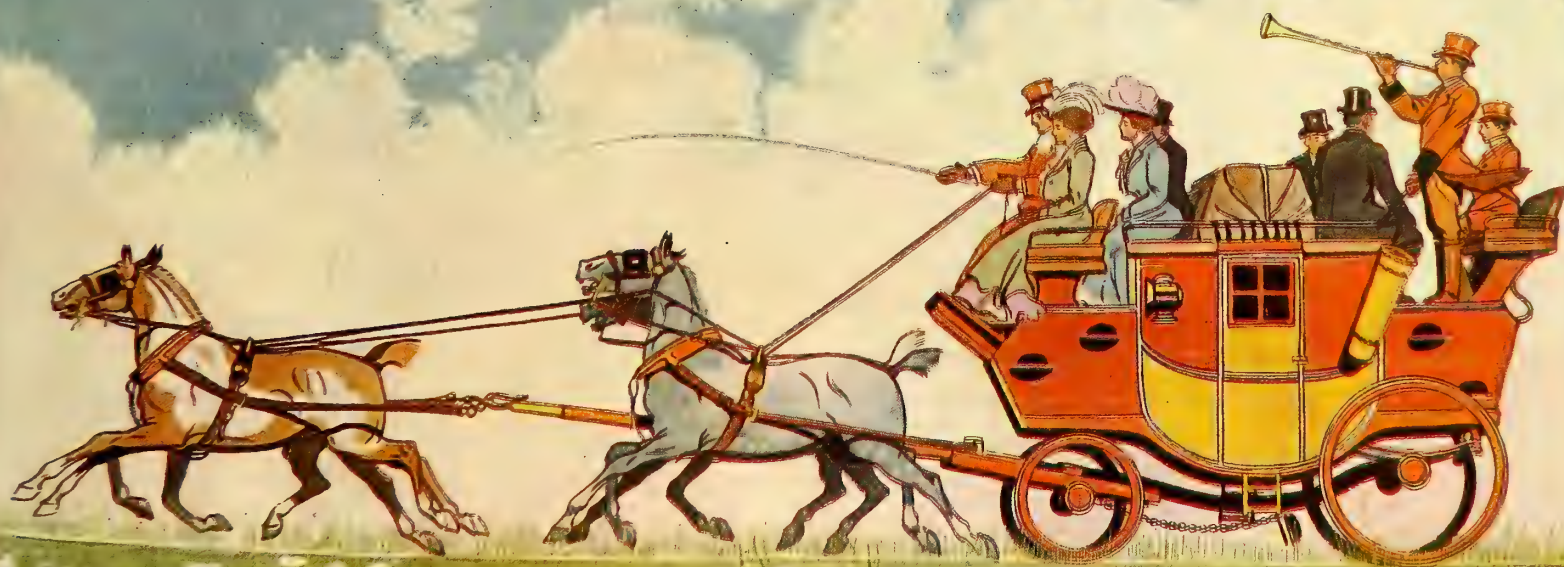
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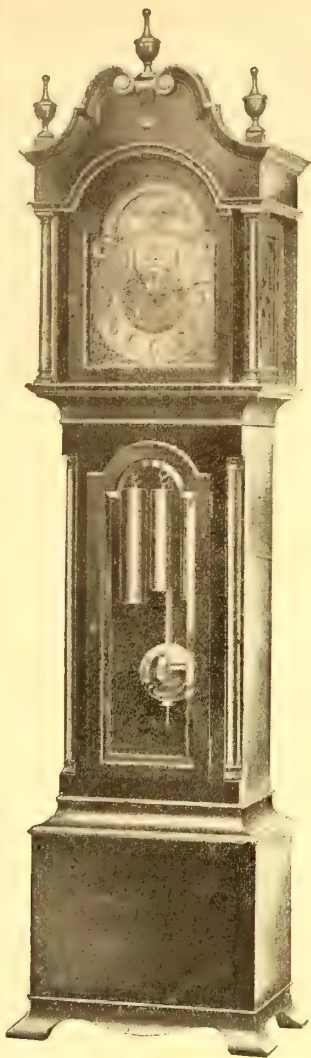


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SEPT., 1910
Vol. VII. No. 9

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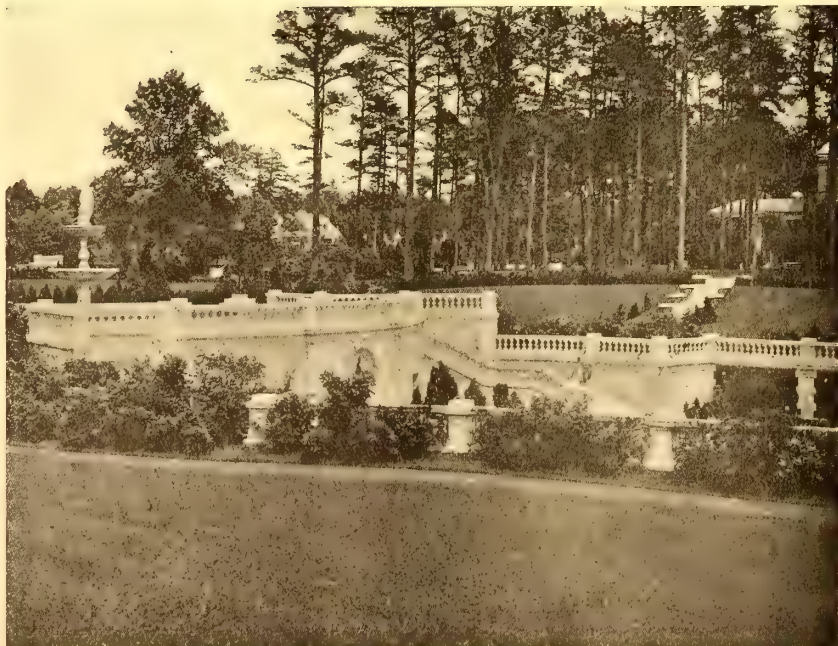
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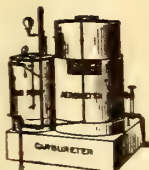
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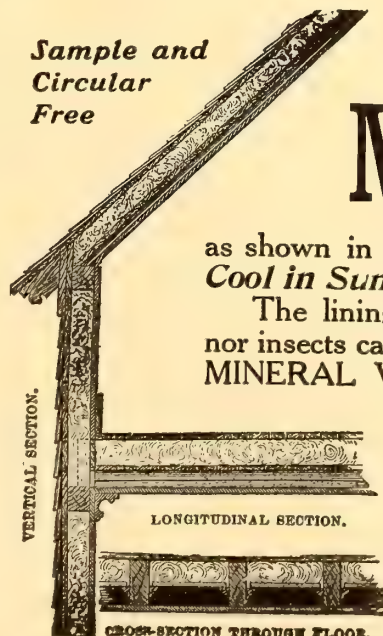
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French Methods of Denaturization constitute the subject of a good article published in *Scientific American Supplement* 1599.

How Industrial Alcohol is Made and Used is told very fully and clearly in No. 3, Vol. 95, of the *Scientific American*.

The most complete treatise on the Modern Manufacture of Alcohol, explaining thoroughly the chemical principles which underlie the process without too many wearisome technical phrases, and describing and illustrating all the apparatus required in an alcohol plant is published in *Scientific American Supplements* 1603, 1604 and 1605. The article is by L. Baudry de Saunier, the well-known French authority.

In *Supplements* 1607, 1608, 1609 we publish a digest of the rules and regulations under which the U. S. Internal Revenue will permit the manufacture and denaturation of tax free alcohol.

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The Sources of Industrial Alcohol, that is the Farm Products from which alcohol is distilled, are enumerated by Dr. H. W. Wiley in *Scientific American Supplements* 1611 and 1612 and their relative alcohol content compared.

The Distillation and Rectification of Alcohol is the title of a splendid article by the late Max Maercker (the greatest authority on alcohol) published in *Scientific American Supplements* 1627 and 1628. Diagrams of the various types of stills in common use are used as illustrations.

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CANNING AND PRESERVING FRUIT

HINTS FOR THE HOUSEWIFE—V*

By Marie Parloa

Concluded from HOMES AND GARDENS,
August, No. 8, page xii.

Covering Jellies.

Jellies are so rich in sugar that they are protected from bacteria and yeasts, but they must be covered carefully to protect them from mold spores and evaporation. The following methods of covering jellies are all good:

Have disks of thick white paper the size of the top of the glass. When the jelly is set, brush the top over with brandy or alcohol. Dip a disk of paper in the spirits and put it on the jelly. If the glasses have covers, put them on. If there are no covers, cut disks of paper about half an inch in diameter larger than the top of the glass. Beat together the white of one egg and a tablespoonful of cold water. Wet the paper covers with this mixture and put over the glass, pressing down the sides well to make them stick to the glass; or the covers may be dipped in olive oil and be tied on the glasses, but they must be cut a little larger than when the white of egg is used.

A thick coating of paraffine makes a good cover, but not quite so safe as the paper dipped in brandy or alcohol, because the spirits destroy any mold spores that may happen to rest on the jelly. If such spores are covered with the paraffine they may develop under it. However, the paper wet with spirits could be put on first and the paraffine poured over it.

If paraffine is used, break it into pieces and put in a cup. Set the cup in a pan of warm water on the back of the stove. In a few moments it will be melted enough to cover the jelly. Have the coating about a fourth of an inch thick. In cooling the paraffine contracts, and if the layer is very thin it will crack and leave a portion of the jelly exposed.

Canned or bottled fruit juices.

Fruit juice is most desirable for drinking or for culinary purposes. Grape juice is particularly good as a drink. It may be canned with or without sugar but, except where the grapes have a large percentage of sugar, as is the case in California, some sugar should be added to the juice in canning.

Currant juice may be sterilized and canned without sugar. This juice may be made into jelly at any season of the year.

Fruit juices that are designed for use in frozen creams and water ices should be canned with a generous amount of sugar.

For grape juice good bottles are to be preferred to fruit cans. If you can get the self-sealing bottles, such as pop or beer comes in, the work of putting up grape juice will be light. If bottles are employed, be very careful to sterilize both bottles and corks.

Grape Juice.

Wash the grapes and pick from the stems. Put the fruit in the preserving kettle and crush slightly. Heat slowly and

(Continued on page iv)

* Reprint of Farmers' Bulletin 203, issued by the Department of Agriculture.

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New York May 24, 1910

W. L. Davey, Genl. Mgr.,
c/o The Davey Tree Expert Co.,
Kent, O. H. I. O.

Dear Mr. Davey:—

I have your kind favor of the 1st and the little "box" for all of which I beg you to accept thanks.

It gives me pleasure to say also that we now have great satisfaction in the work done on our trees by you. I am very sure that it has not only greatly increased their beauty, but will prolong their lives.

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John D. Archbold

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boil gently for half an hour. Crush the fruit with a wooden spoon.

Put a sieve or colander over a large bowl and spread a square of cheese cloth over the sieve. Turn the fruit and juice into the cheese cloth; drain well, then draw the edges of the cheese cloth together and twist hard to press out all the juice possible.

Put the strained juice in a clean preserving kettle and on the fire. When it boils draw back and skim. Let it boil and skim; then add the sugar and stir until dissolved. Boil five minutes, skimming carefully. Fill hot sterilized jars or bottles. Put the jars or bottles in a moderate oven for ten minutes, in pans of boiling water. Have some boiling juice and pour a little of it into the jars as they are taken from the oven; then seal. Place on boards and set aside out of a cold draft.

A good proportion of sugar and juice is a gill of sugar to a quart of juice. The preparation and use of grape juice has been discussed at length in an earlier bulletin of this series.

Raspberry, Blackberry, Strawberry, and
Currant Juices.

With all these fruits except currants, proceed the same as for grape juice, but adding half a pint of sugar to each quart of juice. Currants will require a pint of sugar to a quart of juice.

Cherry, Plum, and Peach Juices.

To preserve the juice of cherries, plums, peaches, and similar fruits, proceed as for jelly, but adding to each quart of juice half a pint of sugar instead of a quart as for jelly. If it is not desired to have the fruit juice transparent, the pulp of the fruit may be pressed to extract all the liquid.

Fruit Syrups.

The only difference between syrups and juice is that in the syrup there must be at least half as much sugar as fruit juice.

These syrups are used for flavoring ice creams and water ices. They also make a delicious drink, when two or three spoonfuls are added to a glass of ice water.

Raspberry Vinegar.

Put four quarts of raspberries in a bowl and pour over them four quarts of vinegar. Cover and set in a cool place for two days. On the second day strain the vinegar through cheese cloth. Put four quarts of fresh raspberries in the bowl and pour over them the vinegar strained from the first raspberries. Put in a cool place for two days, then strain. Put the strained juice in a preserving kettle with three quarts of sugar. Heat slowly, and when the vinegar boils skim carefully. Boil twenty minutes, then put in sterilized bottles.

About two tablespoonfuls of vinegar to a glass of water make a refreshing drink.

Similar vinegars may be made from blackberries and strawberries.

A GOOD VARNISH

FINELY powdered copal 100 parts, dried at 248 deg. F., is placed, while still hot, in a vessel that can be tightly closed, over which pour 280 parts of acetone, which will produce, after solution, a varnish that will dry very rapidly and which gives a fine glossy coating to paper (maps, copper plate prints, etc.). By the addition of highly rectified alcohol, the varnish may be made to dry more slowly.

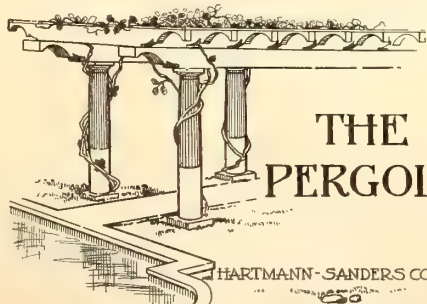
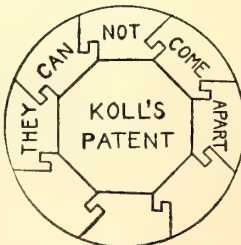
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The Garden in Your Town



THE publishers of American Homes and Gardens desire to announce a Garden Competition for 1910, and will offer \$100 for the four best planned, developed and successful suburban or village garden. The Garden Competition Editor of American Homes and Gardens wants to know if your garden is a success. If so, write and tell him about it. Tell him how you planned and how you planted your garden, and what success you had with it; tell him of the plants with which you had the best results and the ones which were failures; how you arranged for a succession of bloom; how you made use of the natural limitations of the plot and what mistakes you made. We want you to help us so that we may help others to beautify their surroundings, for this is the object of this competition. You need not be a skilled writer to tell the story of your garden success. Tell it in your own way.

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For the best garden received we will pay :

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For the third - \$15.00
For the fourth - \$10.00

Conditions

Competitors for the prizes must comply with the following conditions:

- 1 A general description of the garden, consisting of not more than fifteen hundred words, giving the size of the plot and the kind of plants used in planting, must be submitted. Give any details which you think will be of interest.
- 2 Drawings of the plot are to be made in black and white, drawn to the scale of eight feet to an inch, showing the position of the various plants and shrubs. Name each variety of plant on the plan by a number, giving a separate list with a corresponding number by which each plant may be identified.
- 3 Photographs of the garden must be submitted. It will be of interest to send as many photographs of the garden, taken from as many points of view and at different times in the summer, as illustrate the changes in the garden's appearance to the dominance of certain flowers. The photographs must be printed on printing-out paper and are to be not less than five by seven inches in size. A photograph of the site of the garden before it was developed would add interest to the series.
- 4 Descriptions, drawings and photographs are to be marked with a pseudonym which is to be enclosed in a sealed envelope containing the name and address of the competitor. All descriptions, plans and photographs are to be sent free of any name or address on them except the pseudonym. Express or postage charges must be fully prepaid.
- 5 Just as soon as the judges have rendered a decision upon the four best gardens submitted for this competition, they will notify the Editor who will open the envelopes bearing the pseudonym and containing the competitor's true name, and will at once notify the successful competitors that they have won the prizes.
- 6 The Garden Competition Editor reserves the right to publish in American Homes and Gardens all prize gardens and those gardens which in the opinion of the judges are worthy of honorable mention. The names of those whose gardens are reproduced will be published with the photographs.
- 7 Contributions are to be submitted to the Garden Competition Editor, American Homes and Gardens, Munn & Co., Publishers, 361 Broadway, New York.
- 8 The garden competition closes September 15, 1910. Contestants need not to be subscribers to American Homes and Gardens, and no charge or consideration of any kind is required. No photographs, manuscript or plans will be returned.

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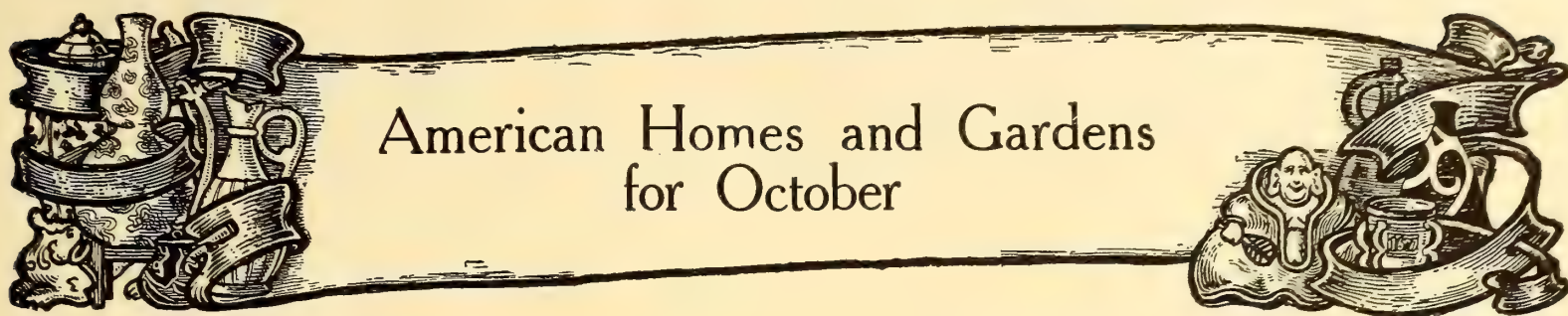
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American Homes and Gardens for October

A Notable Home

The house and the garden of W. S. Spaulding, Esq., at Pride's Crossing, Mass., form the opening article of the October number. Both the house and the formal garden are particularly well illustrated by many fine engravings. All the features of the house and the garden are intimately described by Barr Ferree in a very interesting manner.

Topiary Art

During the past few years there has been a remarkable revival of what had at one time become a lost horticultural art. A. Jennings Brown has prepared a very interesting article on this subject, which is illustrated by some excellent engravings showing the various forms of design in which a shrub may be treated.

Handicraftsman

A. J. Squires has prepared an excellent article on the subject of "Sun-Dials Made At Home." The article is illustrated by engravings and diagrams showing how this may be done, and it might be an aid to those who would like to have a sun-dial without the expense of its purchase.

"The Rice Field"

The residence of Mrs. Charles E. Perkins, at Westwood, Mass., known as "The Rice Field," is a typical New England farm house, built to form a continuation of house, stable, garage and coachman's house, all under one continuous roof. Paul Thurston has prepared an excellent article on the house and the garden, which is amply illustrated by fine engravings.

"Planning a Formal Garden"

Charles Downing Lay shows by a ground plan and a very able description, how to arrange and to develop a formal garden. He tells how to plan it, how to plant it, and what kind of shrubs and plants should be used. This article ought to be of service to all who are interested in a subject more pretentious than the ordinary style of garden.

Decorations and Furnishings for the Home

Miss Alice M. Kellogg presents her eighth paper, on the subject of decorating and furnishing the home. Her contribution for this issue will be devoted to the "Furnishing of a Boy's Room." Very little thought is given, as a rule, to the furnishing of a boy's room, but Miss Kellogg tells in her usual practical and helpful way, how much can be accomplished in the decorating and furnishing of a room of this type, and aids it by the use of several engravings.

"Bulbs to Plant in the Autumn"

Now is the time to consider the kinds of bulbs to plant in the fall, in order to have a proper welcome in the first warm days of spring. Is there anything more joyful than the first flowers of the spring, the hyacinths, the daffodils, the tulips. S. Leonard Bastin has prepared an illustrated article telling of some of the best bulbs to plant and how to plant them in order to secure the highest possible results.

"Fireproof Houses from an Artistic Point of View"

It has been thought difficult to design a small house of fireproof construction and at the same time put into it some of the artistic values which are so frequently found in stucco houses. The group of houses illustrated in this article was built in Orange, N. J., and represents a very handsome type of house of fireproof construction. Edith Haviland has prepared an excellent paper on the subject, pointing out some of the salient features of this form of construction.

"A Pompeian Villa"

One of the show places of California is the "Pompeian Villa," built for Andrea Sbarboro in the Italian-Swiss Agricultural Colony at Asti. It is completely described by Horatio F. Stoll, and is profusely illustrated by charming landscape views of vine and villa, picturesque colonists' quarters and rose-covered wineries, all of which form an impressive object lesson of what can be accomplished by good taste.



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CONTENTS FOR SEPTEMBER, 1910

	PAGE
THE SPLIT RAIL FENCE SO FREQUENTLY SEEN IN FARMING DISTRICTS.....	<i>Frontispiece</i>
FENCES, WALLS AND HEDGES	<i>By Helen Lukens Gaut</i> 335
HOMES OF MINNEAPOLIS	<i>By Francis Durando Nichols</i> 338
THE HANDICRAFTSMAN—Cabinet Making as a Handicraft.....	<i>By Ira S. Griffith</i> 345
POST-AND-BOARD FENCE OF CONCRETE	<i>By John R. Spears</i> 347
DECORATIONS AND FURNISHINGS FOR THE HOME—VII. Built-in Furniture,	
	<i>By Alice M. Kellogg</i> 348
THE SUMMER RESIDENCE OF MR. CHARLES H. BOND.....	<i>By Mary H. Northend</i> 351
EIGHT LOW COST HOUSES IN THE SUBURBS OF CHICAGO	354-355
THE DANGER OF THE USE OF MILK FROM TUBERCULOSIS COWS....	<i>By Frank N. Bauskett</i> 356
THE COUNTRY SEAT OF G. ST. L. ABBOTT, CONCORD, MASS.	<i>By Barr Ferree</i> 359
AN AMERICAN POTTER, HER HOME AND STUDIO.....	<i>By Grace Wickham Curran</i> 364
GARDEN NOTES—Bedding with Evergreens	<i>By Charles Downing Lay</i> 367
AUTUMN WORK IN THE GARDEN.....	<i>By Ida D. Bennett</i> 369
THE HYDRANGEA	<i>By Eben B. Rexford</i> 371

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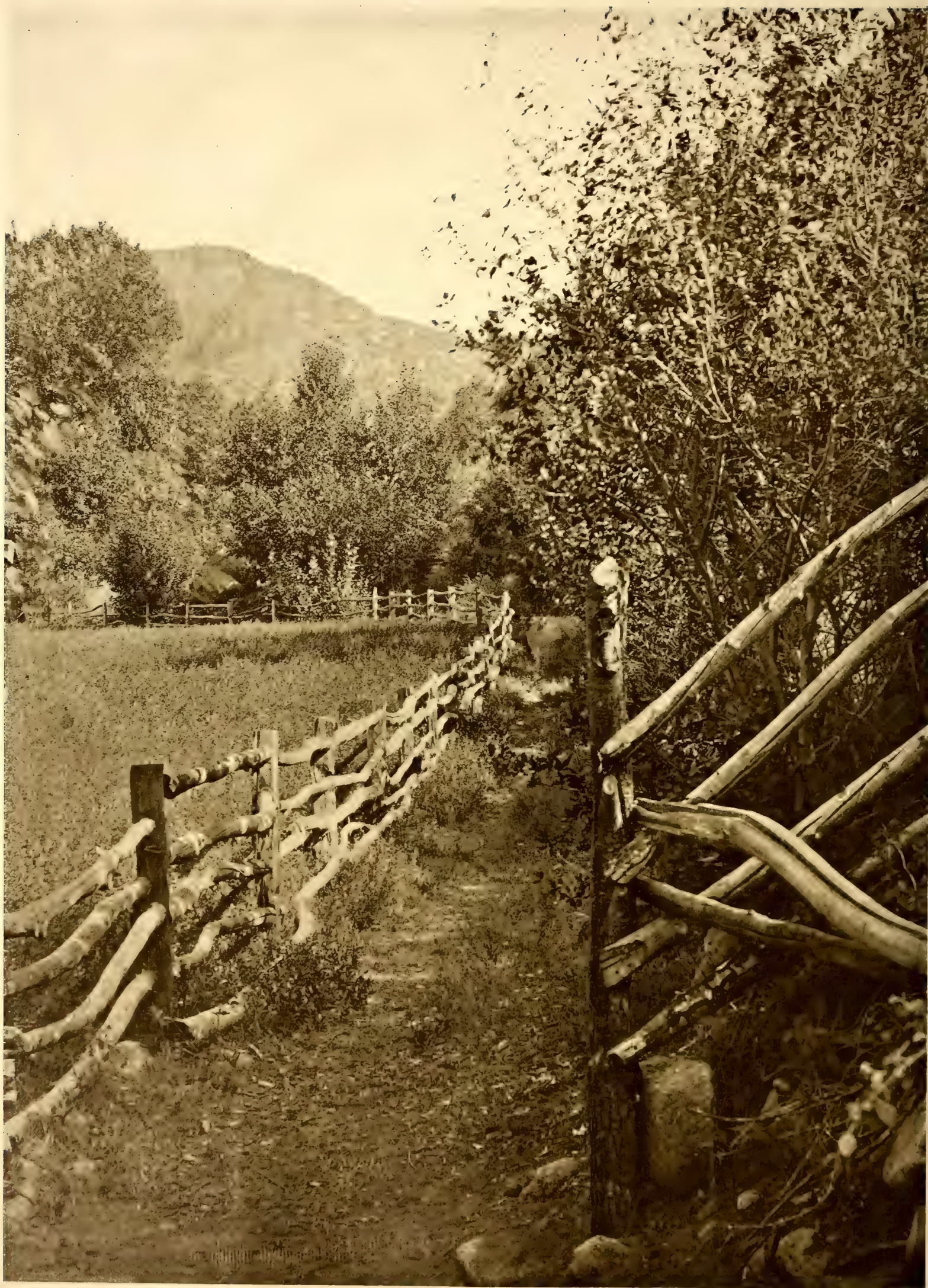
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The split rail fence so frequently seen in farming districts

AMERICAN HOMES AND GARDENS



Volume VII

September, 1910

Number 9

Fences, Walls and Hedges

By Helen Lukens Gaut



THE general impression is that fences, walls and hedges are built with the intention of keeping something in, or of keeping something out, but this is a mistaken idea, for many of them are built or planted for ornament, or for affording restful seclusion from the street.

In design, material, quality and cost fences are of wide variety, and those costing the most money are not always the most attractive. Often simplicity, cleverly and artistically expressed in rustic timber, field stone, or wire mesh, is far more effective in fence building, than fine workmanship and elaborate materials.

One seldom finds a fence surrounding a city lot, for in such location it is desirable to give an impression of space, and this is possible only by letting one's lawn unite with the lawn of one's neighbors. Sometimes the dividing line is marked by a low hedge of geraniums or roses, which is, of course, always effective. While not often found at the front of the city lot, the fence is frequently a delightful feature of the back of the premises, where it may enclose the kitchen garden, or perhaps screen a quiet rest spot, for back yards can be used for storing peace and comfort and beauty, as well as garbage cans, clothes lines and rubbish. Fences for such a purpose are usually of wood lattice or mesh wire, overgrown with flowering vines. They screen the garden,



A brick wall makes a fine enclosure for a garden



A hedge of arbor-vitae forms an excellent screen for a roadway



An excellent wall can be built of concrete



A combination of boulders and brick make an effective wall

not only from the street, but from the next door neighbors, and with their wealth of clambering vines and blossoms, give pleasure to all who look upon them.

Though these city fences, or screens, may be of no architectural scheme, the gateways leading through them are often wonderfully attractive and quaint. The hooded gate is always interesting and picturesque, and the heavier the supporting timbers, the better the effect. The roof of this hood may be of shingles, shakes, red tiles, or malthoid, but should, to be harmonious, correspond in material with that of the house of which it is an accessory. A plain, straight timber frame for a gate, consisting of a rough six by eight redwood post on either side, topped with an overlapping cross beam of like dimensions, is inexpensive and decidedly pleasing. A framework of medium-sized logs fashioned in the same way, makes an admirable entrance to go with a rustic fence. For covering these fences, it is well to choose vines that are hardy growers, as well as those that are green the year round. Honeysuckle is always desirable, for it is ever green, and requires little care. In spring, when in the glory of its blooming, its fragrance is far-reaching. English ivy is always satisfying, while there are many varieties of roses that are a continual delight. Wistaria, clematis, bougainvillea, asparagus fern, woodbine, etc., are all beautiful when at their best, but some of them sleep half the time, and it is then that we grow a bit tired of them, and long for the energetic plants, those that never tire of budding and leafing, and grasping for higher places. Covering these fences or screens with vines, is hardly a satisfactory finish. To complete the scheme artistically, there should be a low banking of thick-foliaged plants, such as geraniums for instance, to cover the lower part of the fence, and the lower legs of the vines. In se-



Cobble stones make a good wall on which vines may climb



A privet hedge forms a fine enclosure for a garden

lecting plants for these bankings, one should always consider harmony of color between the flowers of the banking, and those covering the fence. True, it is not as difficult to combine floral colors out of doors, as it is to combine colors of gowns or house furnishings, for all Nature is on tolerably friendly terms, yet once in a while, as in the case of purple bougainvillea and red geranium, and some other combinations, colors are decidedly antagonistic, and their union should be avoided.

In the country, or in the suburbs, the fence is an important factor in the home scheme. To its design, to its material and to its building, much careful thought should be devoted, for it is the "outside," and from its appearance one is apt to judge of, and predict, what lies within. It should in some way intimate the type of house to which it belongs, formal or informal, pretentious or unpretentious. To correspond with the Colonial house, the mission plaster house, the brick or the stone house, one should install a fence that looks a bit substantial, one a trifle more dignified and serious than the rose-colored wire mesh, or wood lattice. Masonry, combined with wood or iron intimates strength and durability, and there are many admirable ways of putting material together. By placing large square masonry pillars fifteen or twenty feet apart all round the premises, and running a low wall of masonry topped with either wrought iron fencing or wood lattice between these pillars, delightful results may be obtained. The pillars and low wall may be built of plain red brick, cobblestones, field stones, or cement, or all of these materials may be jumbled together and make a good appearance. Pillars of stone or cement topped with red brick, look better than those without caps. Red tiles are also used for capping. In using

(Continued on page 370)



A garden wall of rough surfaced brick and stone



A garden wall and steps built of cobble stones



A splendid tree overhangs the gateway

Homes of Minneapolis

By Francis Durando Nichols



ONE of the principal characteristics of a most progressive and flourishing city of any locality in this country lies in its artistic and livable homes, then evidently Minneapolis may lay claim to the distinction of such possessions.

Minneapolis of the Middle-West is certainly a "City of Beautiful Homes," built on a broad scale, without any attempt or pretense to be more elegant than the requirements that a refined and cultured people demand.

The houses illustrated in this series are representative of a few of the best types of moderate cost that have recently been constructed in that city.

While built in the city limits, they might be called either suburban or country houses, for the reason that any one of them is adapted to be built in any locality, the only difference being in the amount of land which surrounds each one of them, whether it be simply a suburban plot, or a country acreage.

The houses of the Middle-West differ from the Eastern only so far as the materials which are used for their building are concerned. Although the latter frequently show more timber in their construction, the concrete and plaster buildings are becoming more common in the East, while the clapboarded house, which was formerly so frequently seen in that district, is practically unknown in the important cities of the West.

There is a distinctive charm about the English half-timbered house, and the one treated in that style and illustrated in Figs. 1, 2, 3, 4, 5, and 6, and built for J. F. Atwood, Esq., is not the exception to the rule, for the exterior is most pleasing and artistic. The house is constructed of red brick to the level of the window sills of the first story, while the remainder of the building is covered with beams stained a Van Dyke brown and forming panels which are filled in with cream colored stucco. The roof is covered with shingles and stained red. The interior finish of the lower floor is severely plain. The entrance to the house is direct with the living-room, which is trimmed with English



Fig. 1—The residence of J. F. Atwood, Esq., is built of brick and half-timber work



Fig. 2—The rear of Mr. Atwood's house is as attractive as the front

oak, and provided with massive beamed ceilings. The stairs are placed directly opposite the entrance door and are built in such a manner as not to be seen from the main part of the living-room. These stairs are stained a dark brown to match the woodwork.

The fireplace in the living-room is built of "rain-drop" brick laid with raked joints and in white mortar and finished

with a hooded mantel. The hearth is built of brick laid with a curb of finished stone.

The library, separated from the living-room by an archway, is provided with book-cases, and a paneled seat over which are built a group of small lighted windows.

The dining-room is trimmed with oak and has a high paneled wainscoting, a window-seat, and a fireplace. French windows placed at one side of the room open direct to the living-porch, which has a wainscoting to the height



Fig. 3—First floor plan

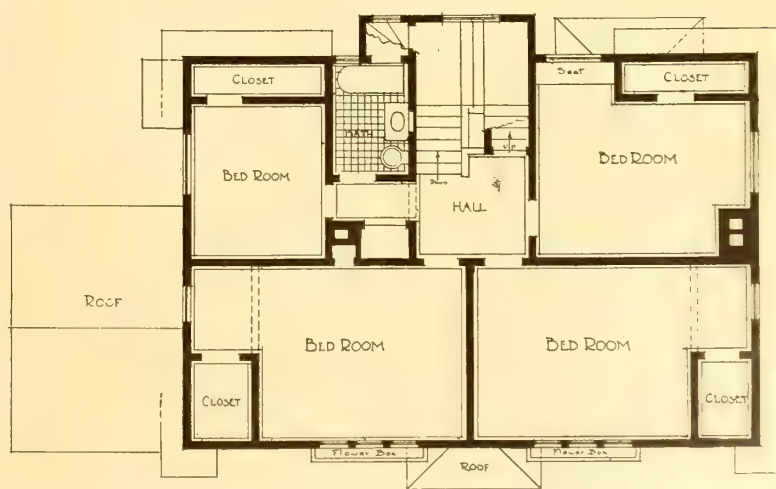


Fig. 4—Second floor plan



Fig. 5—The panels of the half-timber work are filled in with rough plaster

of two feet, and a floor paved with brick.

The principal rooms have rough plaster walls, and are tinted a pinkish tan color. The service part of the house

is fitted up complete with all the best appointments.

The second story is treated with white enamel paint. The bathroom has a tiled floor and wainscoting and is furnished



Fig. 6—The living-room is finished in old English oak



Fig. 7—The residence of L. K. Thompson, Esq., is designed in the Colonial style

with porcelain fixtures with exposed nickel-plated plumbing.

There is a bedroom and a trunk-room in the attic, while the cellar contains laundry, heating apparatus and fuel-room.

This house cost \$6,000 to build, but the increase in building prices at the present time would bring it up to \$7,000. Mr. Harry W. Jones, of Minneapolis, was the architect.

The residence of L. K. Thompson, Esq., illustrated in Figs. 7, 8 and 9, is another house designed by Mr.

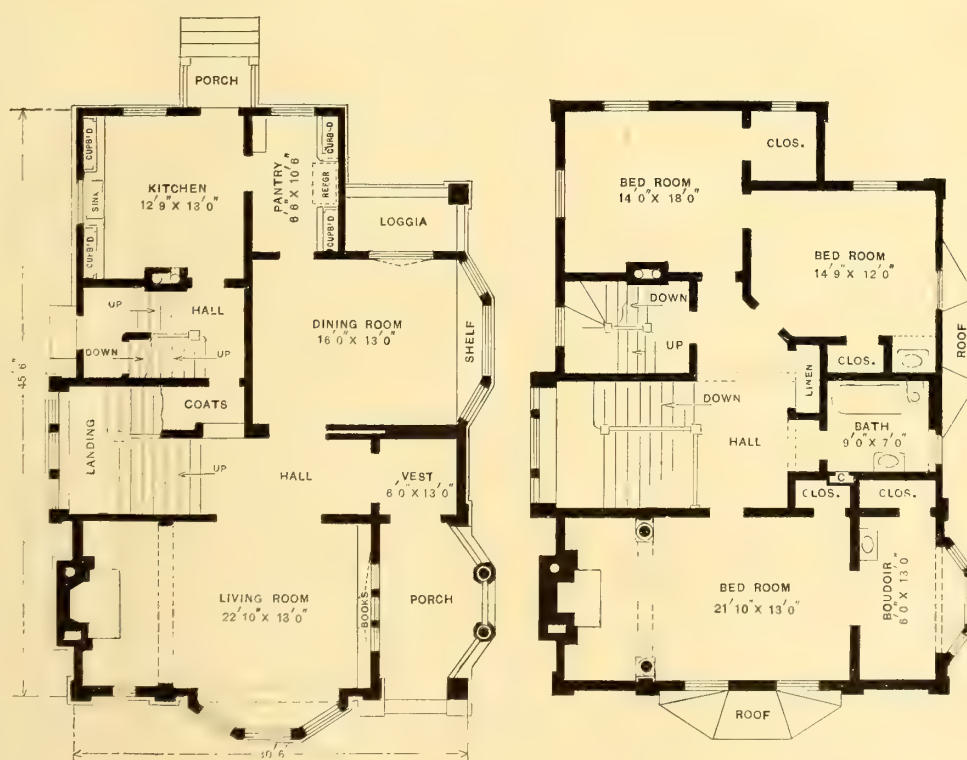


Fig. 8—First floor plan. Fig. 9—Second floor plan.

Jones, and the style is the Colonial.

The exterior is covered with clapboards, and the entire building is painted white. A balustraded terrace extends across the front of the house.

The vestibule, hall and living-room are paneled in carefully selected curly birch, stained and finished in mahogany. The hall has a broad staircase ascending to the second story. The living-room has a heavy beamed ceiling and wooden cornice, dividing it into two sections. The walls are cov-

ered with Japanese parchment, and the hangings and the rugs are in green, to harmonize with the color scheme. A great open fireplace is built at one end of the room.

The dining-room is finished in weathered oak, and it has a wooden cornice. The furniture in style and color was made to match the the room. The



Fig. 10—The west front of Dr. E. C. Pickler's house

ground of dull blue; blending well with the color scheme of the rooms.

Soft cream-colored net curtains are hung at the windows, while the overhangings are of a soft grayish blue to match the Oriental rug. The dome over the dining-room table is a Tiffany floral design in oxeye daisies.

The kitchen and pantries are trimmed with Georgia pine and are most complete in every

respect. The second floor contains the owners' suite, and two guest rooms and bath. The trim throughout is treated with white enamel paint and has glass door knobs and trimmings. The

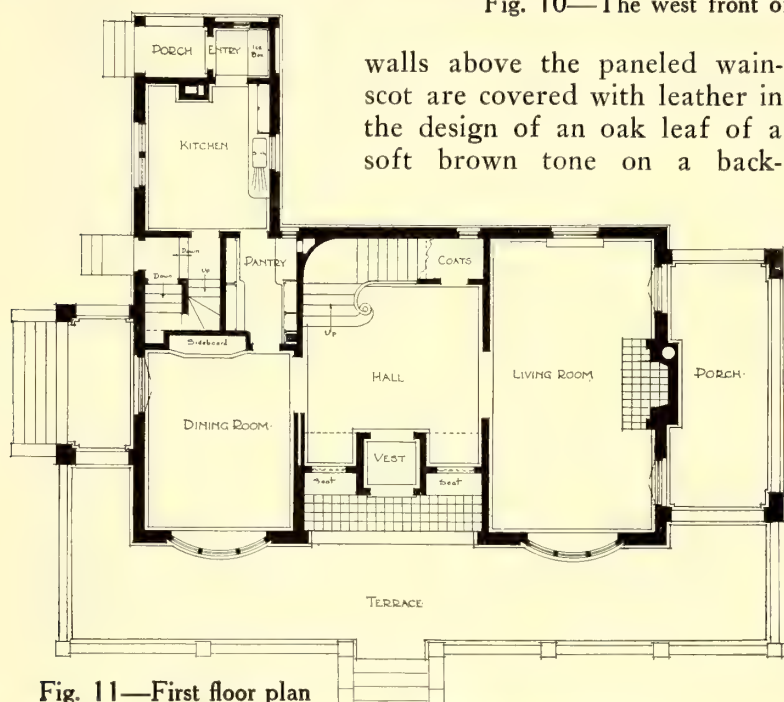


Fig. 11—First floor plan

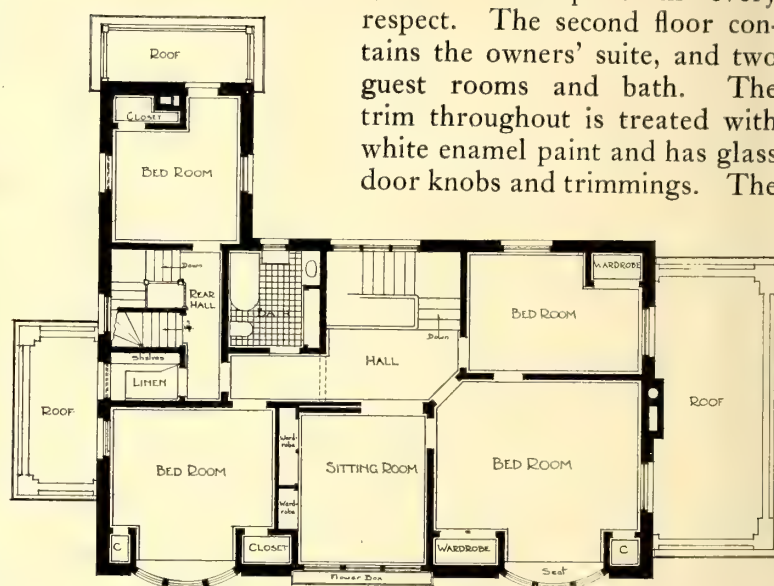


Fig. 12—Second floor plan

walls above the paneled wainscot are covered with leather in the design of an oak leaf of a soft brown tone on a back-



Fig. 13—The entrance front of Dr. Pickler's house has a terrace

bathroom has a tiled floor and wainscoting six feet in height, and is furnished with porcelain fixtures and exposed nickel-plated plumbing. The third floor contains a billiard-room, a den, the servant's rooms and bath. The cellar contains laundry, furnace-room, store room and fuel-rooms.

The house built for Dr. E. C. Pickler, from plans also prepared by Mr. Jones, and illustrated in Figs. 10, 11, 12 and 13, is of red brick laid in white mortar. The trimmings are painted white and the shingled roof is stained a dull shade of green.

The hall is a central one reached from a paved vestibule, is trimmed with mahogany and it has a paneled wainscoting. On each side of the front door the wainscot opens so that bookcases can be built in which are not seen when the doors are closed. The staircase has a mahogany balustrade built with a graceful sweep.

The living-room is treated with white enamel paint. It has a paneled wainscoting, above which the wall is finished in pretty colored paper. The ceiling is light yellow between the beams, which are painted white.

The marble fireplace is finished with a mahogany mantel and over-mantel in one panel extending to the ceiling. The net curtains at the windows have over-draperies of mahogany velour. French windows open onto the living-porch.

The dining-room is trimmed with mahogany, and it has a paneled wainscoting, above which the walls are covered with a dull blue paper. The windows are hung with net curtains with over-draperies of blue velour.

The scheme of the lower and upper halls is dark brown. The second floor is treated with white enamel paint, and each room has a different color scheme. The bathroom is wainscoted with tile to the height of six feet, and it has also a tiled floor, porcelain fixtures and exposed nickel-plated plumbing.

The sitting-room in the second floor is finished the same as the hall. The third floor contains a maid's room and a store room. The cellar is provided with laundry, heating apparatus and fuel-rooms.

The brick house illustrated in Figs. 14, 15, 16, 17 and 18 was built for T. E. Cootey, Esq., and from plans prepared by architect Cecil Bayliss Chapman, of Minneapolis.



Fig. 14—A brick house built for T. E. Cootey, Esq.



Fig. 15—The living-room of Mr. Cootey's house



Fig. 16—The dining-room of Mr. Cootey's house

The exterior walls of the house are laid of red brick with white mortar in a Flemish bond. The half-timber work is stained a dark brown color, and the trimmings are painted white. The roof is covered with shingles, and stained a deep red.

The hall and the living-room are trimmed with red birch, stained and finished in imitation mahogany. Both are wainscoted in panels to the height of four feet. The staircase rising out of the hall, also has a similar wainscoting. The walls above the wainscoting are covered with an ingrain paper. The fireplace in the living-room has a hearth and facings

of brown Grueby tile and a mantel. The ceiling is beamed. The over-draperies at the windows are of brown velour.

French windows at the end of the dining-room open into the *loggia*.

The dining-room, which is particularly handsome, is trimmed with red birch, finished with white enamel. It has a high-paneled wainscoting and a beamed ceiling. The overdraperies to the windows are of old blue silk.

The second story is treated with white enamel paint. The bathroom has a tiled floor and wainscoting and porcelain fixtures.

The third floor contains the servants' rooms.

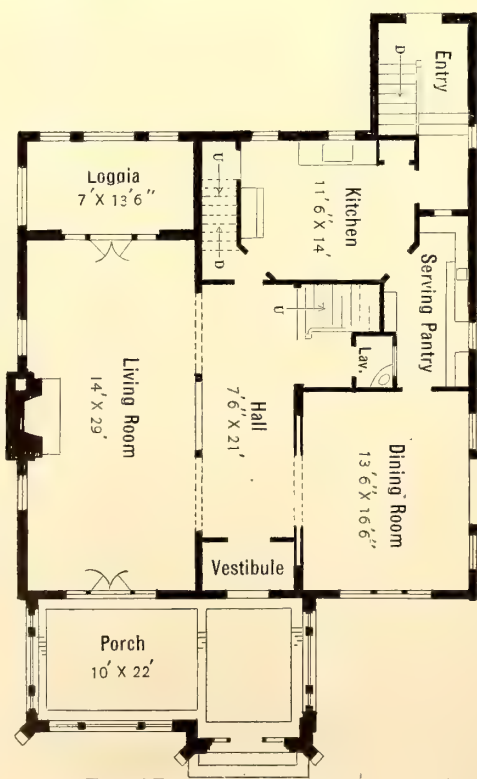


Fig. 17—First floor plan



Fig. 18—Second floor plan



The Handicraftsman

Conducted by

A. Russell Bond



Cabinet Making as a Handicraft

By Ira S. Griffith



THE rapid introduction of manual training into the schools of the country is having its effect upon the home. More boys and men than ever are engaged in handicraft work at home. School instruction in shop work has aided in developing that desire, active or latent, which is present in every person—the desire to “do” things.

Of all the crafts commonly engaged in on the part of boys and men, woodworking is one of the most satisfactory. Its equipment is comparatively inexpensive, the principles involved are easily learned, the exercise that it gives is invigorating and the material results are valuable and lasting.

The first thing to be considered by one who intends to take up woodworking as a handicraft is the location of the shop. The place most commonly used, because it is the most readily prepared, is the basement. Basements are generally subject to moisture, at least at certain periods of the year, and for this reason are not suited for the keeping of either lumber or tools. If at all possible, secure a room on the first floor with plenty of light.

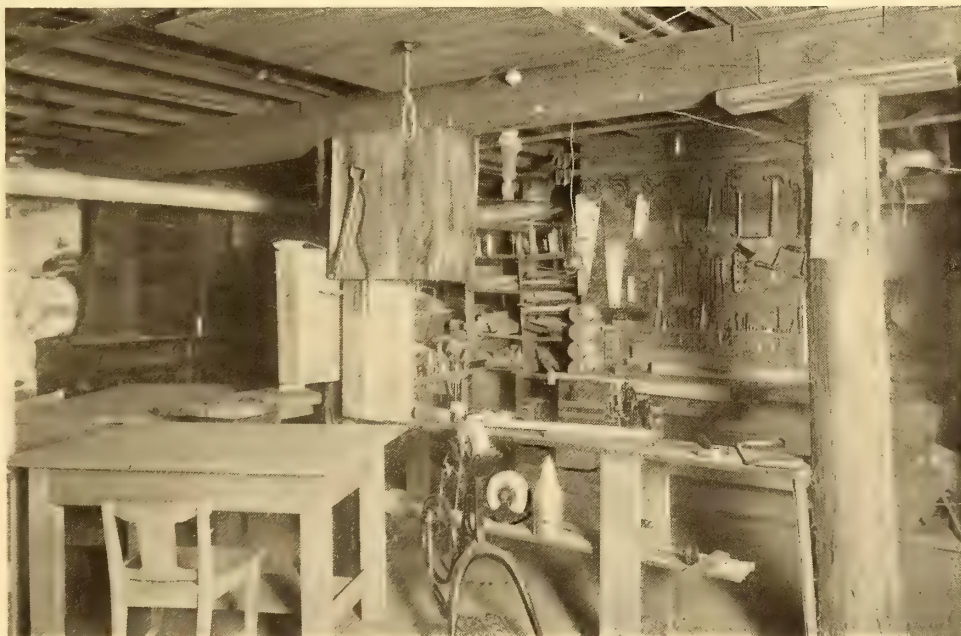
Next to be considered is the work bench. In this as in the selection of tools there is great latitude, depending upon the amount of money one is willing to invest therein. A satisfactory bench—one that will answer every requirement—can be built at small expense. Such a bench may be built to the wall or independently. Pieces of 2x4 inches should be used for legs, 1x8 inches for cross pieces with a 2-inch plank for the front edge of the top. Fixtures for the vise will cost about sixty cents. A visit to the shop of your carpenter will give you the necessary de-

tails for such a bench and all the necessary attachments.

For \$10.50 a neatly finished, thoroughly constructed cabinet-maker's bench with two vises—side and tail—can be purchased. Such a bench will be 24x78 inches, hard maple and an ornament to any shop. If one is in a position to purchase irrespective of higher cost, he will find combination cabinets and work benches that are especially made for handicrafters, complete in every appointment, made to fold away the tools as compactly as a Pullman car.

Only the highest grades of tools should be purchased. A cheap tool that will not “hold an edge” is a poor investment any way it may be considered.

If necessary to make a sacrifice in purchasing tools, let it be in numbers rather than in quality. If one is not informed as to tool quality let him ask his carpenter friend. The following is an equipment that will be sufficient for simple woodwork such as chairs, tables, etc. The specifications are standard and are given only for comparison. There are other “makes” of equal quality. The prices are “list” and are subject to discount when bought in



A typical amateur's workshop

quantity. No. 5 Bailey iron plane complete, \$1.83; six-inch Stanley iron-handled try-square, 24c; ten-inch swing Barber brace, ratchet and ball bearing, \$1.62; thirteen-ounce Maydole, plain-faced claw hammer, 55c; Stanley round, hickory, mortised mallet, 3x5 inches, 13c; six-inch tower Champion screwdriver, 35c; boxwood marking gage, 28c.; six-inch P. S. and W. dividers, 32c.; Lily-white Washita oil-stone, fine, 6x2 7/8 inches, 45c; oil can, 18c; twenty-inch Bishop crosscut saw, \$1.40; twenty-two-inch Bishop rip saw, \$1.40; three-fourths-inch Buck Bros. beveled edge, leather-tipped handle, socket firmer chisel, 68c; three-eighths-inch chisel as above, 57c; cabinet

scraper, 2x4 inches, 20c; three auger bits, $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ inch Russell Jennings, \$1.09; ten-inch backsaw, Bishop, 94c; nail set, 15c; Rosehead countersink, 20c; Bailey ten-inch spokeshave, 20c; six-inch Stanley T-bevel, Eureka flush, 40c; glue heater, $1\frac{1}{2}$ pints, \$1.35; two-bar carpenters clamps, 4 feet, \$4.00; one foot-power grindstone, \$4.50; directions for woodworking and wood finishing, "Essentials of Woodworking," \$1.00.

Woodworking and woodfinishing are sciences as well as practices and the amateur handicrafter to get the most satisfactory results must needs know somewhat of the methods of procedure. The various tool processes, the steps in making the different joints, the manner of sharpening tools and in applying the different woodfinishes are easily learned. A few minutes spent in reading the text specified above as occasions arise will not only bring more satisfactory results, but will save the worker's time and add to his pleasure by enabling him to work to the best advantage.

It is the part of wisdom for a beginner to "try himself out" upon some simple piece of wood, preferably in soft wood such as pine or poplar, before undertaking something that will take a long time to complete and which has difficult construction. Once one has learned to saw to a knife line with a fair degree of accuracy and can "square up" a piece of stock from the rough, he may consider himself ready to undertake cabinetwork such as is here illustrated.

There is much drudgery connected with woodworking that modern mill practice makes unnecessary for the worker in wood to perform. Every lumber yard carries in stock lumber that has been mill-planed on two sides to stock thicknesses. Not only this, but the amateur will find it advantageous to have table tops and the like surfaced at the planing mill.

In ordering stock, specify the number of pieces of each size, then the thickness, the width and the length. If the stock is to be mill-planed specify S-2-S or S-4-S, according to whether it is to be planed to size on two or four sides. S-2-S meaning

surfaced, smoothed or sized on two surfaces or sides. Allow $\frac{1}{4}$ of an inch extra in the width of pieces to be S-2-S, and at least $\frac{1}{2}$ an inch extra in the length in either case.

It never pays to order pieces with the ends squared up at the mill. The amateur should do that himself, as well as the rest of the work such as laying out and making the joints, or he would not be warranted in calling the product his own work. To order more than this, the surfacing done at the mill deprives one of the most interesting part of the work and passes the point where the mill machines can do the work more profitably than the amateur can do it himself.

Of all the woods used in cabinetwork, by far the most satisfactory, considering cost, ability to stand wear and beauty of appearance when finished is quarter-sawed white oak.

With the revival of waxed finishes for furniture, woodfinishing is comparatively simple and an amateur may count on getting satisfactory results with but very little experience.

The plain, square Mission type of furniture is the favorite with beginners. After the amateur has been well broken into this work, he may attempt something a little more elaborate and will find that the crudity and severity of the Mission type of cabinet work can be relieved by a graceful curve here, a simple bit of carving there, an inlaid pattern or hammered copper ornament.

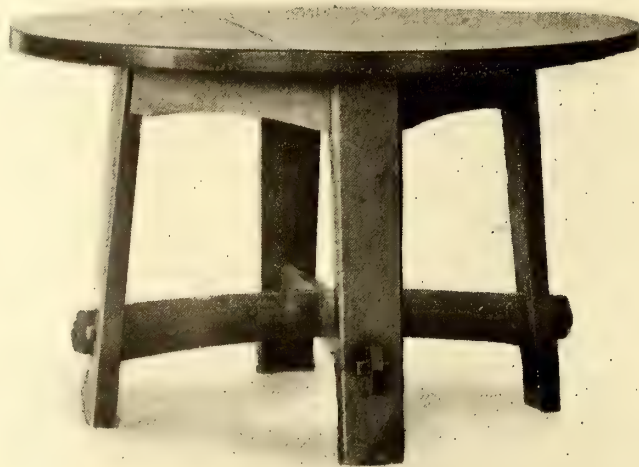
The accompanying illustrations are examples of work which may be undertaken by beginners, and show how the severe Mission style may be modified.

These photographs, by the way, are illustrations of work done by boys in a manual training school, and illustrate how the natural bent for mechanical work, which is found in almost every boy, may be developed by the proper guidance. Although we have had manual training schools for many years, there are still many who confuse them with trade schools and do not realize that

the purpose of this form of training is not to make carpenters, mechanics, etc., of the pupils, but to give the child an all-round development. Undoubtedly the majority of



A three-legged stand



A round top dining table of mission style



A class in cabinet making, at work

boys and girls who take a course in manual training will never make any professional use of the skill thus attained, but throughout their lifetime will find invaluable the ac-

curacy of hand and eye and the general handiness learned in the school without mentioning the pleasure that may be obtained by continuing such work in an amateur way.



A number of interesting examples of work done by boys in an up-to-date manual training school

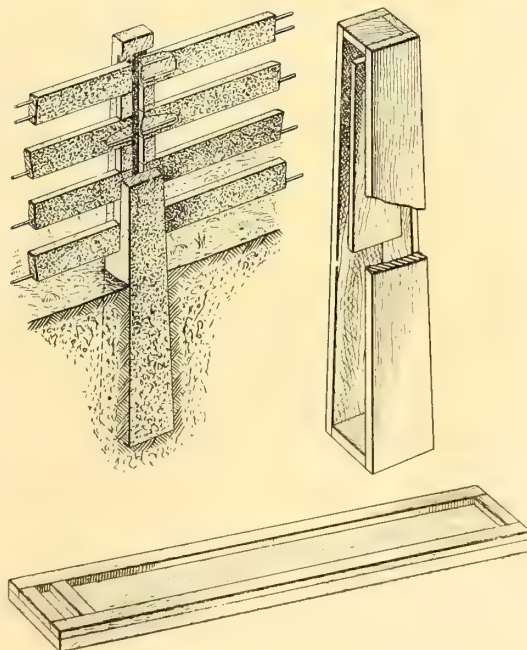
Post-and-Board Fence of Concrete

By John R. Spears



THE well-known post and board style of fence if built of concrete makes a unique ornament. The following instructions will be found very simple! To make the posts, construct a box seven feet long by seven inches wide and deep at one end, and five inches wide and deep at the other. At the center place a board on edge $1\frac{1}{8}$ inches thick and 3 feet $7\frac{1}{2}$ inches long, with a width tapering to correspond to the depth of the box. The board should stand $2\frac{1}{2}$ inches from the end of the box at the narrow end. The parts of the mold should be tacked or screwed together so that they may easily be removed. The central board should be withdrawn as soon as the concrete has hardened sufficiently to hold its shape. Before filling the mold, it should be lined with building paper, or else thoroughly greased. The slabs or panels may be cast in molds such as illustrated, and should be reinforced with a quarter-inch rod near the lower edge. The upper panel should have a reinforcing rod at the upper edge as well. To space the panels, short posts or tiles will be required which may be cast in the same mold with the panels, as shown. The panels should be 1 inch thick, 6 inches wide, and 6 feet $11\frac{1}{2}$ inches long, if

the posts are set 7 feet apart on centers.



A post and board fence of concrete

With the panels and tiles assembled, as indicated in the drawing, a space will be left at the top and down the center of the post, which may be filled with cement, so that the slabs and posts will form a monolithic structure. The best mixture of concrete for the fence will be 1 part cement, $2\frac{1}{2}$ of sand, and 5 of broken stone.

Decorations and Furnishings for the Home

VII—Built-In Furniture

By Alice M. Kellogg



HERE is a marked increase in the last few years of houses that are individually adapted to their owner's needs. This is especially true of homes of moderate cost, where original expression is often worked out by the personal efforts of some member of the family.

Leaving out the question of the exterior effects in house building, one realizes that in the inside of the house there are opportunities for building in fittings that conform to the architectural plan, often at a less cost than buying their counterparts in movable furnishings.

In all such undertakings the starting point must be a real need, which is met by a careful adjustment of design and material to the conditions.

With the disregard of these principles there is an obvious element of incongruity that robs the permanent interior fittings of any artistic value. Fortunately, the mistakes in this branch of house furnishing are not as frequent as in the ordinary selection of the movable articles, doubtless caused by a more careful attention bestowed upon the former.

The saving of space is an important factor in the consideration of built-in furniture, as it oftentimes preserves the lines of the room without unnecessary jogs and abutments, as in the case of bookshelves and cabinets that are sunk into the wall. Of course, these must

be a part of the original building or their introduction will require considerable tearing out and reconstruction. In sunken bookcases the contents may become a real wall decoration, if their bindings are arranged with regard to harmonious color effects. With the low wall broken up in this way into a variety of different tones, the upper part may be considered the real background for the room and treated accordingly with a plain, self-toned or two-toned covering.

In many of the Colonial and early Nineteenth Century houses the spaces at either side of the fireplace were fitted with cupboards with paneled doors painted white like the woodwork, useful compartments without any recommendation of exterior beauty.

An improvement for this situation is the modern plan of built-in shelves for holding books, with the upper part for holding pottery and bric-a-brac. Such shelving usually looks best when made of the same height as the mantel, and

finished like the woodwork, or trim, in the room, as illustrated in the large picture of a library.

To the careful housekeeper, the open bookshelves present only a lurking place for dust, but a less practical eye finds almost as much entertainment from the exposed bindings and titles as in reading the contents of the books themselves. In some households this open-shelf enjoyment is paid for at the price of a personal care of the books. The designs for open bookshelves are limited, but these may be perfected in every detail of materials and construction and finish. The shelves should be adjustable, the boards strong, to endure carrying the books without sagging. The space nearest the floor may be boxed in, as shown in the illustration, or it may have a board on hinges to close up the inside space which may be utilized for storing magazines and pamphlets.

Plain glass doors (see illustration) are not as ornamental as those divided by leads or wooden lattice work, but their larger spaces of glass reduce the time spent in the search for books to a minimum. In the best class of houses in which architectural skill is employed, the designs for the leaded glass doors of closed bookcases would be an original expression following the general idea of the interior decorations. In a library, where Dutch traditions were carried out in the general scheme, the outlines of the quaint little ship which Henry Hudson brought over



Combining a desk with bookshelves

from Holland, were effectively introduced in the glass of the door panels.

The leaded glass has the advantage over the wooden strips, as the latter may shrink and expand under unexpected conditions of the atmosphere, especially when they are laid like a skeleton over one large sheet of glass. In the better class of cabinet work, the wooden lattice is enclosed on each side with glass to prevent its cracking. Almost the same effect as lattice work can be obtained by using small panes of glass, diamond shaped or oblong, with wooden separations of thick moldings.

Two different ways of furnishing the tops of built-in bookcases are pictured in the illustrations, with and without a back shelf, whichever is preferred.

In a den, or library of small size, there is not always space enough for a writing-desk or table, and some combination of wall shelves with a place for writing is a ne-



Sideboard for a Colonial dining-room



Low bookshelves



Sideboard for an English dining-room

cessity. In the illustration the various needs of a library worker have been met in a clever arrangement of cabinet, bookshelves, drawer space and writing-table. The decorative details that leaded glass, drawer pulls and hinges lend to cabinet work have not been overlooked in this combination.

In a college girl's room of quite tiny dimensions, a portfolio rack, bought in a department store, was changed into a writing-desk by fastening it to the wall and increasing the length of chain to allow one side to hang level. In the front of the rack a colored print was pasted as a decoration when the rack was closed against the wall.

In bungalows of the cheaper type, with the wall posts and beams left exposed, there are numberless opportunities for original fittings of shelves for books and bric-a-brac, with and without the addition of doors.

The contents of book shelves may be partially screened

or entirely protected by a curtain, according to the way in which it is hung and the material of which it is made. Silk gauze showing a silk-woven pattern makes an artistic curtain, or a fancy net may be laid over a colored silk if something more unique is desired. The new way of interlacing embroidery silk in a border pattern on a square-meshed lace is also attractive. A heavier material for more practical purposes can be found among the sun-fast colors that have lately been brought over from Scotland. These colors with their different weaves are so varied that one may select almost any required weight and texture for any specific purpose, with the satisfaction of knowing that the expense put into them will be rewarded by durability.

Perhaps the most popular expression of built-in furniture is the window and fireplace seats that one sees in houses of the olden time, and in others that are thoroughly up to date. Stone seats in the window recesses of ancient castles



A corner cabinet



An old cupboard

are a picturesque memory to the traveler, and something of their charm becomes associated with those in our modern dwelling. One may, of course, overdo this contribution to the furnishings and introduce a superfluity of permanent seats, but, aside from a caution in this direction, one may contribute much to the interior effect of a room by installing a fireside settle or a window seat.

Of the first variety one expects to find the back rather high to make a snug enclosure near the fire or the hearth. If the seat is boxed in it will afford a convenient receptacle for firewood, and sub-divisions may be made for kindlings and logs. As the height and width of the seat contribute a large part toward its success, these points should be determined upon by actual experiments before accepting the ordinary dimensions.

Window seats are usually incorporated with the original plan of a house, but they may often be added as an after-thought. The mistake is in admitting them when they do not fit into the construction as if they belonged to it, as when the window is too shallow to admit a board of the right width and its projection becomes imperative.

Seats that are built into windows may have the lower part left open showing the supports, or they may be boxed in with the space left for storing away small articles. An improvement on having the top of the seat open is to have the front panel arranged to drop to the floor on concealed hinges.

Placing a window seat in a hall is not so often thought of as in the living-room, but it often creates a point of interest that is unattainable with the movable furniture. In the dining-room, too, the window seat often contributes distinct usefulness to the furnishings, particularly when the family is given to much entertaining.

A built-in seat in the nursery need not be placed by the

window. A long, wide, low seat against the wall affords enjoyment in various ways for small children and takes the place of chairs, sofa and table.

Whether to cushion a built-in seat or leave it uncovered is sometimes a problem to the home maker, and no definite rule can be specified as a solution. In some places where the wood is obviously well selected and carefully finished, its uncovered surface adds to the dignity of the woodwork, and, again, where the seat is not low enough to admit of the cushion without raising it to an uncomfortable height, it is best to leave off the cushion.

The most substantial filling for a cushion that is used very much is hair of a good quality. For a long seat such a filling would cost almost as much as a mattress for a single bed, and as a substitute at less cost one may use layers of cotton felt. As the material for covering a seat cover is tufted, a pattern does not show to advantage. A plain or striped material is almost always the best choice, in colors that will withstand both the wear and action of the light.

Linen velour is a favorite covering for cushioned seats, as its range of colors is extensive and its wearing quality well known. Its width is fifty inches and the price by the yard from a dollar and sixty cents to two dollars and a half. Corduroy at a dollar a yard is only twenty-seven inches wide, but it is an excellent covering for a window-seat cushion, as it is strong in texture and when it fades its tones are still worth preserving.

With the covering of the seat in plain goods, the selection of the pillow covers can be made from figured materials. The size of the pillow is usually the width of the seat, and it is better to cover both sides of the pillow alike, than to join two separate pieces and cover the seams with trimming. A neat finish may be given by stitching the edges a quarter of an inch from the outside.



A library with built-in furniture

The Summer Residence of Mr. Charles H. Bond

By Mary H. Northend



ONE of the most noticeable of the newer residences in the region of beautiful homes, outlining the now famous North Shore, is that of Mr. Charles H. Bond's, on Puritan Road, at Swampscott, Massachusetts.

This mansion is conspicuous chiefly from the stateliness of its architecture. In type it is Colonial, modified somewhat to obtain even greater results in the way of comfort and attractiveness, having broad surrounding verandas, with severe Colonial columns, balustrades and various details in the way of ornamentations. In tone of coloring it is a silver gray with trimmings of white and set off with green blinds.

The interior is simple, with pleasant vistas from the hall of broad spaces, perfectly apportioned. A landscape paper in Matterhorn design is perhaps the most commanding feature. The staircase-hall extends through the house. It opens through a broad arched doorway into a large inner hall. This apartment has a broad fireplace and is furnished in bamboo with red leather upholsterings.

The reception-room, which opens from the hall, also has

a large fireplace; the woodwork here is paneled in white; the upholstering is in rose colored tapestry in the style of Louis XVI, and the coverings are striped damask. Another of the broad doorways leading from the hall opens into the drawing-room, an apartment of great size, which occupies one side of the house. Fluted pillars along the side break its length and add stateliness to the general effect.

There are beams overhead of dark cypress of which all the woodwork here is formed. The walls are hung with Japanese grass cloth in bronze, whose beauty of texture and richness of coloring could at best be but vaguely described. Colonial furniture upholstered in Dutch blue reps, and exquisitely designed "Crete" hangings at the doors make the right touch of coloring for this long room. It opens direct at one side upon a sun parlor of octagonal shape and large in size; this is also finished with a beamed ceiling but with panelings and moldings of California red-wood.

The dining-room is elliptical in shape and Colonial in treatment. The fireplace here has bricks set in white mortar, and is overhung by a narrow mantel painted white, while the color tone of the room is green. An English Wilton



A semi-circular pergola forms an enclosure for the garden



The house and the formal garden

rug covers the center of this floor, making a pleasant deviation from the bare hard-wood floor now so universal. The walls are hung with heavy paper of a forest pattern, which is very effective. A specially noticeable feature, and also a desirable one, is the built-in closets with leaded doors, which contain the glass and the china. The furniture is strong, Colonial in type, and upholstered in leather.

The stable connected with this estate is situated on the opposite side of the road from the house. A handsome

Colonial building it is, with its gambrel roof, and entrances which show considerable ornamental work in their design. Tall pillars flank the broad doorway. The interior includes a billiard-room capable of accommodating several tables. This place is finished in dark cypress, and is utterly modern and convenient in every detail. Like the house, it was planned by Mr. James S. Kelly, of Boston, Mr. Bond's architect, to whose exceptional ability is due the perfect equipment for comfort in each of the buildings.



The beauty of the formal garden is the mass of tangled flowers



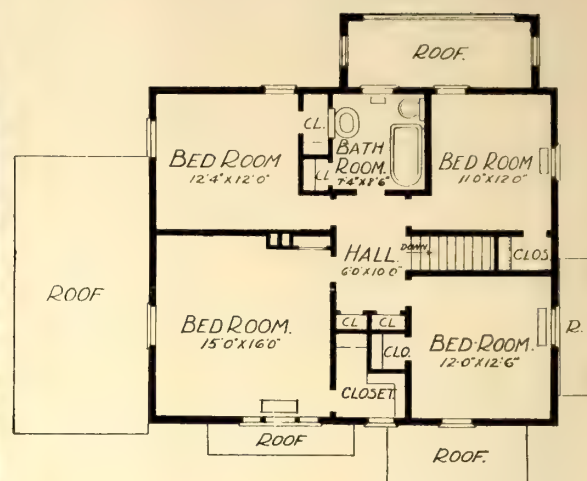
The walls of the hall are covered with a landscape paper of Matterhorn design



The dining-room walls are covered with a paper of forest design



A stucco house built for Mr. Walter Herrick, Oak Park, Ill.



Second floor plan of Mr. Mock's house



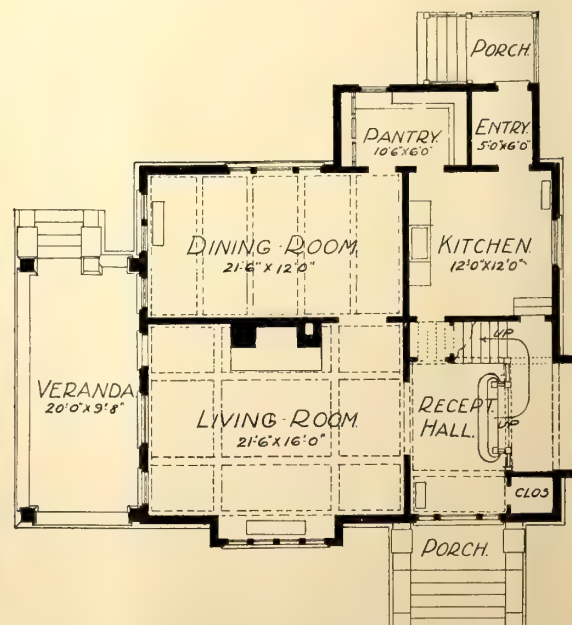
A house built for Mrs. Charlotte Wyman at Kenilworth, Ill.



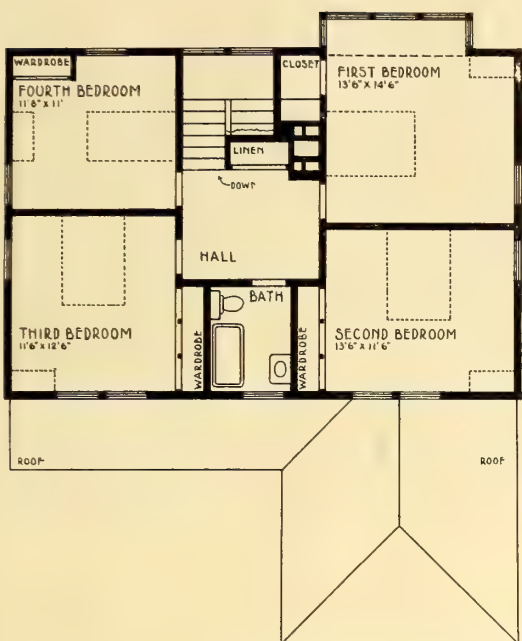
The residence of Mr. Charles M. Mock, Kenilworth, Ill.



A shingled house built for Mr. Whiting T. Lovell, Oak Park, Ill.



First floor plan of Mr. Mock's house



Second floor plan of Mr. Simmons's house



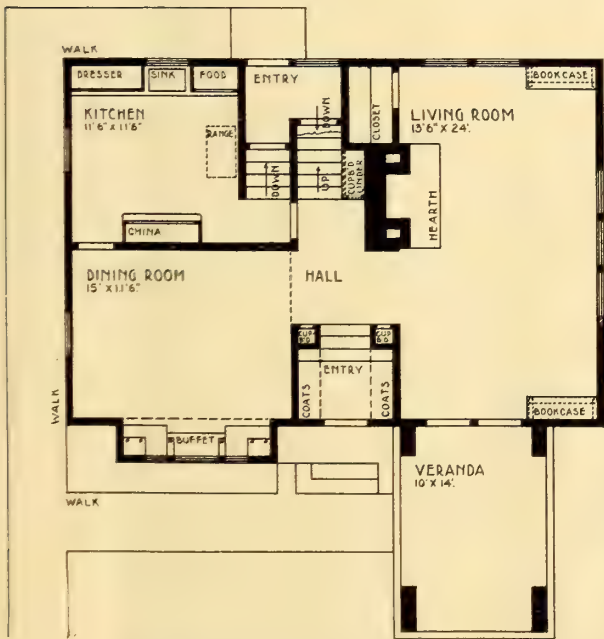
The home of Mr. Bert Wallace, Oak Park, Ill.



The residence of Mr. C. E. Simmons, Oak Park, Ill.



A cottage built for Mr. A. M. Briggs, Kenilworth, Ill.



First floor plan of Mr. Simmons's house



A stucco house built for Mr. Edward Middleton, Oak Park, Ill.



A visibly tuberculous cow



A very old animal affected with the disease

The Danger of the Use of Milk from Tuberculosis Cows

By Frank N. Bauskett

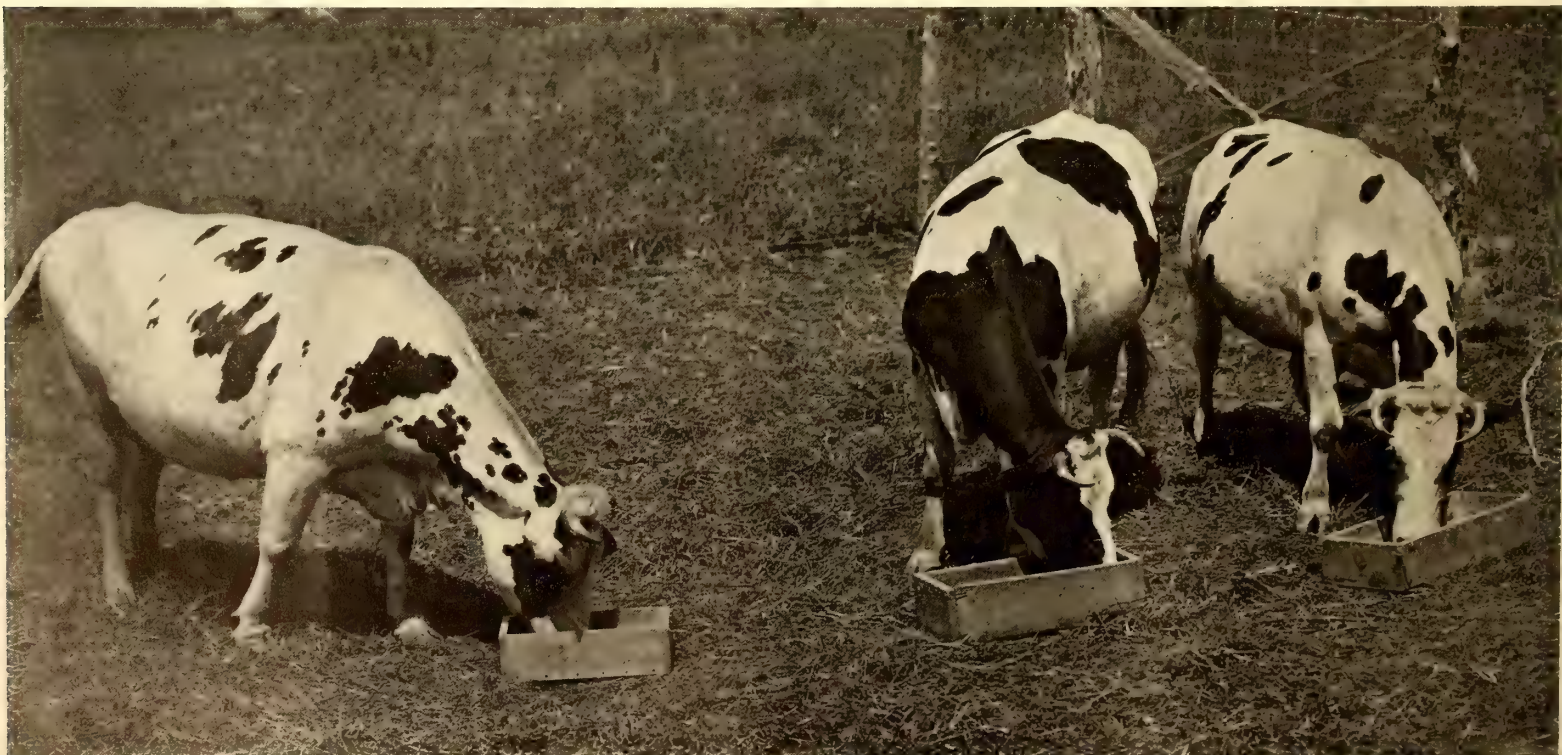


THAT fifteen per cent. of the people dying of tuberculosis in the District of Columbia is due to milk supplied from cows afflicted with the disease was the startling announcement recently made after a few weeks investigation by the federal inspectors under the Department of Agriculture. That such a condition exists in other parts of the country there can be little doubt.

In the herds in and around the District of Columbia, not only a few of the animals have been diseased, but nearly the whole of a herd has been found afflicted. The first day of inspection eighteen cows out of a herd of twenty-one were found to be affected with tuberculosis. The second day twenty-three head were found diseased in a drove of twenty-eight. Every animal now in the District is to be inspected, requiring the time of a force of federal inspectors for several months. Under the regulations of the District of Columbia, these diseased animals can be killed, but the owner must be paid for his stock. In each

of the animals slaughtered tuberculous lesions were found, showing that the tuberculin test is absolutely trustworthy, while the inspection without the test is found to be futile. In some of the handsomest herds of thoroughbred animals, which have been inspected without the test, and which to all appearances were in excellent health, was found the most aggravated cases.

It is admitted that the District health authorities knew that the herds of cattle from which the District's milk supply is derived were diseased, and knew that the milk was causing sickness and death among the consumers, but the plea is made that they were powerless to act for lack of funds; that Congress is to blame. Can one imagine such a deplorable condition of affairs. How can this dreaded disease be fought successfully, if one section of the country does everything in its power to stamp it out and another part of the country conceals the fact that many of its people are dying from the use of milk from animals affected with the disease! How long would the condition obtained had not the federal authorities asked permission to investigate



Tuberculous cows apparently in a healthy condition. Disease is spread among other animals by the slobber from their mouths during eating



A tuberculous bull. Dangerous in transmitting the disease to other animals

the matter? Surely Congress could not have closed its purse had the condition as it was found to exist been laid before it! At any rate, Congress has now before it a bill making provision for the amelioration of conditions as they now exist over the entire country with regard to cattle affected with tuberculosis.

The scientists of the Department of Agriculture say that tuberculosis or consumption, alike of persons and of cattle, is an infectious disease, caused by the growth and multiplication of a very minute plant in the bodies of its victims. The little plant, which cannot be seen without the aid of a microscope, makes up for its small size by the rapidity with which it multiplies under favorable conditions. It is shaped like a little rod and is known as the tubercle bacillus, and is the one absolutely essential and indispensable cause of the disease. Without it the disease does not and can not occur, no matter how many conditions favorable to its development are present. The greatest tuberculosis danger to which animals are exposed, and likewise the greatest tuberculosis danger for public health that has its origin among animals, is the tuberculous dairy cow, and dairy cows are



A tuberculous cow of the kind not uncommon in dairy herds

more commonly affected with the disease than other cattle and other kinds of animals. This condition is supposed to be due to the fact that dairy cows are more closely housed than other animals. When milk is infected directly through the udder it is exceedingly dangerous, because the tubercle bacilli it contains are apt to be numerous and of the freshest and most virulent kind. All cows affected with udder tuberculosis expel tubercle bacilli directly with their milk, and some authorities believe that many cows, especially advanced cases of more or less generalized tuberculosis, also do, though no tuberculous disease can be detected in their

udders. Because of the long-concealed character of tuberculosis, through which it is especially dangerous when it affects animals that are valued, like dairy cows, this concealed character must be regarded as one of the important facts about the disease; too many persons are inclined to take for granted that a dairy herd is free from tuberculosis simply because the cows of which it is made up look and act as though in perfect health. And for that reason a study of the accompanying illustrations will be interesting. Often the disease progresses to nearly its fatal termination in cattle without showing a well-defined symptom or an observable sign of its presence. The only infallible way to discover whether an animal is affected with the disease is by means of the tuberculin test. This test has been used in thousands of cases by experts of the Department of Agriculture and has always been found most reliable. Tests have been made on cattle, hogs, horses, donkeys, goats, sheep, and many other kinds of animals, and in some cases doses of tuberculin from fifty to one hundred times as large as



At the time this picture was taken this cow was a dangerous source for the spread of the disease. Without the tuberculin test she would have passed as a healthy cow

those customarily used for a test have been injected, and not one of the numerous tests was followed by an injury to a healthy animal.

The fact that any one organ or of several organs of a cow may be almost wholly obliterated by tuberculosis before externally observable symptoms of the disease assert themselves should be kept in mind by those who desire to free their herds from tuberculosis, by those who desire to keep a healthy herd free from the disease by avoiding the introduction of tuberculous cows into it, and by those who wish to protect themselves from that exposure to tuberculosis which comes to persons through the use of milk and other dairy products coming from animals affected with the disease.



A cow in a well-nourished condition with advanced tuberculosis



The entrance to the residence of G. St. L. Abbott, at Concord, Mass.



The garden front of the house

The Country Seat of G. St. L. Abbott, Concord, Mass.

By Barr Ferree



THE origin of the charming home of Mr. G. St. L. Abbott, at Concord, Mass., was an ugly little four room farmhouse. It was known as the Haggerty homestead, and when Mr. Abbott began his building operations with his architect, Mr. P. B. Howard, of Boston, he built around the old structure. Two of its outer walls and half of its roof are still standing, and partly enclose the kitchens and servants' rooms of the present house. Mr. Abbott speedily became convinced that a better way would have been to have begun his own house as a new building from the foundations, since within a year after his purchase he had to build a farmhouse. He has asked me to point out this initial error as a warning to others and I gladly pass it on.

The old Haggerty house faced the road, which lies northwest of the house; as Mr. Abbott desired a southern exposure, he turned the old house over to the use of his servants, and built what was practically a separate house for his living-rooms, standing back to back with the old house, and opening to the southeast. The avenue coming in from the road ends in a large circle to the east of the house, and to reach the front door one is obliged to walk about thirty feet along a wide brick terrace which separates the house from a good sized garden extending all along its front.

Originally the house consisted of a dining-room with a den to the southeast of it, a hall and a vestibule connected, and a living-room; but before Mr. Abbott had lived there three years his family outgrew the house as originally planned and the "big-room"—the room with the tapestries—the present sitting-room was built to carry the much needed bedrooms above it. This is a marvelously satisfactory room. It is about forty-five feet long by twenty-five feet wide; the windows on the long side overlook the garden, commanding beyond it a view down the Sudbury River valley, and the large window at the end looks southwest into the orchard, and full into the glow of the winter sunsets. The woodwork is oak.

The treatment of the walls of so big a room was a difficult problem. Obviously the proper thing would have been

oak paneling from floor to ceiling. But building is as expensive as it is amusing; so the oak paneling was relegated to a castle in Spain, which it still embellishes, and Mr. and Mrs. Abbott set themselves to considering temporary expedients.

One end of the room was filled with bookshelves, reaching to the ceiling, which satisfactorily disposed of so much of the problem; but the long stretch of wall on the fireplace side was rather a poser until Mrs. Abbott happened to stumble on a couple of tapestry panels which exactly fitted the great spaces on each side of the fireplace; these are modern pieces, but very dignified in design and harmonious in color.

The other two sides of the room being largely taken up by windows, there remained very little wall space to deal with. The first intention was to leave it in rough plaster, unstained. But this, though perfectly satisfactory in the staircase hall, looked crude in the big room. The spaces between the timbering about the fireplace were covered with gold "tea-chest" paper put on over the rough plaster; to prevent the plaster cutting it, the paper hangers pasted on first a cheap wall paper, face to the wall. Seeing this, the problem was solved. More of this cheap paper was ordered, and all the rest of the walls were covered with it. The rough plaster gives it a very pleasant texture, and it has yellowed with time, thus bringing it into excellent harmony with the oak and the tapestry.

The covering of the furniture presented another rather troublesome problem; it was impossible to furnish such a big room at once—for that matter it is not completely furnished yet! Yet it was necessary that there should be some dominant note of color—preferably rather a striking one—that might oppose itself brilliantly to the monotone of the walls. In this dilemma, the thought of turkey red occurred, that being a standard color, to be obtained at all times, in all fabrics, and unlikely to fade; so the whole room, window curtains and all, was done temporarily in turkey red cotton; the window curtains have since been replaced by silk in the same shade, and several of the chairs covered with damask, but the original turkey red still persists in corners.



The garden



The porch

The "big room" occupies the west end of the house, it opens out of the entrance-hall, which was the sitting-room before the "big room" was added. The entrance-hall is done in "mock paneling,"—the molding is tacked on to plaster, forming panels—and painted white. The fireplace at the end is Sienna marble.

Opposite the door into the "big room" two steps lead up into the staircase-hall, which is separated from the terrace by the vestibule, formerly the main entrance to the house,

but now a cloak room. The walls are treated in half timber style, with upright timbers enclosing plaster panels; below, diagonal timbers help to produce the effect of a wainscot; a touch of color is given by the Oxford shields which hang from the tops of the panels—souvenirs of a canoe trip down the Thames some years ago.

Beyond is the dining-room. A long narrow room, with a high wainscot of cypress, the rough plaster walls tinted blue, and a gilt ceiling supported by dark oak beams;



The fine proportions of the house are well expressed in the grouping of the gables

originally a small room, used by Mr. Abbott as a sort of an office, lay to the south of this room, cutting it off from the garden and the morning sun; but after the "big room" was built the dining-room seemed small and out of scale with the rest of the house; so the little room was thrown into it; the heavy arch which divides the room marks the place where the partition used to be and supports the wall of the second story and the chimney. The casement windows on the side open into a conservatory.

The oak beams in the entrance-hall and dining-room are made of trees cut down on the estate, adzed into shape by two old laborers in the garden—before it was a garden. These beams have been stained with walnut juice, and took the stain so well that they look really venerable, although eight years ago they were standing in the woods.

A peculiar feature of the house is that there is no cellar

system which works extremely well. There is no cellar under the "big room" either; the sills to which the floor-boards are nailed are laid on the same foundation as the bricks in the entrance-hall and the dining-room; the only cellar is the small one under the old Haggerty house. This elimination of the cellar is a special fad with Mr. and Mrs. Abbott. This space always has been an abomination to them—the abode of rats, mice and broken bottles, the source of subterranean smells and sounds—a thing always waiting to be cleaned out the first rainy day. The average architect has no sympathy with this antipathy, and the average householder rates his cellar as scarcely less important than his roof; so Mr. and Mrs. Abbott preached their fad to deaf ears, until they met Mr. Howard, in whom at last they found an architect as eager to build a house without a cellar as they were to have one built; and so the thing



The dining-room has a high wainscot of cypress, and blue tinted rough plaster walls

at all under the front part of the house. This is particularly noticeable from the garden. When the house was built the soil was excavated to the depth of three feet, the foundation walls laid to the depth of four feet, the three foot excavation filled with sand and six inches of concrete, on which the brick floors of the dining-room and entrance-hall are laid. The floor of the stairway-hall is raised a foot above the concrete to give room for the furnace pipes to pass underneath. The old house is heated by hot air as well as hot water—the new ell by its own hot water furnace, which is in a basement behind the big room.

The "big room" is heated by a coil of pipes under the window-seat; in winter the wooden back of the seat is taken off and replaced with a piece of iron grill work, to give the hot air free entrance to the room; and the heater is supplied with fresh air through an opening under the windows—a

was done. And the cellar has never been missed.

The brick floors, another fad, also deserve a word. They are made of common building bricks—not pressed brick—laid in basket pattern. They were oiled when first laid, and have been weekly washed with milk and water until they have taken a very nice polish and the trifling irregularity of the bricks gives them a very good effect not unlike the Mercer tiles, now so fashionable. Apart from this they are a great comfort—nothing can hurt them! Except for the walnut juice used for staining the oak, and the white paint in the entrance-hall, absolutely no finish of any kind has been applied to any of the woodwork.

The outside of the house has no existence except as a sheath for the inside; it has scarcely a simple decorative feature of its own. The original structure was built with a gambrel roof, the lower section of the north slope being

half of the roof of the original Haggerty house. On the southern front this roof is broken up with gables and dormer windows to give space and light to the rooms on the second and third floors.

When the "big room" ell was added, it was impossible to bring it into harmony with the rest of the house; on the contrary it was imperative that the roof of the ell should be as nearly flat as possible, so that the west windows of the nursery, in the third floor of the original house, might not be obstructed. It was even impossible to carry out the facade in a continuous line without sacrificing the horse chestnut tree which stands in the center of the brick terrace and breaks the line of the house. So Mr. Howard boldly branched into an entirely different style of architecture, making the ell as unlike the old house as possible, it having a flat roof as opposed to the gambrel of the old house, ending to the west in rounded gables as opposed to the pointed gables and dormers of the other part of the house. Through the apple trees curiously attractive glimpses may be had of this end of the house.



The staircase hall treated in half-timber style

It was rather Mr. Howard's fancy to still further accentuate this unlikeness by building this part of the house of brick, the rest of the house being plaster, applied with wire lathing over wood, but out of deference to Mrs. Abbott this was given up, perhaps unfortunately, and the whole house is covered with plaster; the only difference being that on the new part the walls are of second-hand brick to which the plaster is applied directly, without the use of any lathing, either inside or

out; double walls, with an air space between, prevent the condensation of moisture on the inside.

A wide brick terrace separates the house from the garden; only a small portion of this is roofed over, the horse chestnut tree supplementing this shelter. The garden, owing to the absence of a cellar, is almost on a level with the front door. It is surrounded by an arbor vitae hedge, and ends in a row of brick posts, about twelve feet apart, connected by chains, the whole garlanded with vines. The wide bed on the east of the garden is filled with sunflowers, helenium, spirea and other such rampant per-



The entrance hall has paneled walls and beamed ceiling



Many handsome tapestries cover the walls of the living-room

ennials. The beds on each side of the pergola are filled with peonies; the west border with irises and lilies. The circular bed in the center is planted with standard roses or lilacs. To the east of the garden is the croquet ground. Beyond the pergola is the fruit garden, planted with black-

berries, raspberries, currants and gooseberries, and to a certain extent with the overflow of the flower garden.

Beyond the fruit garden is a hay field, through which a flower-bordered path, its line emphasized by tall poplars, leads up to the tennis court.



Book shelves fill one end of the living-room



An American Potter, Her Home and Studio



By

Grace Wickham Curran



A reticulated lantern with flowers in medallions of brown, blue and green on a brown background

AMONG the many beautiful country homes of America, not the least charming are those designed and built by some of our artists and sculptors. We find them scattered over the land, on mountain top and in sheltered valley, by rocky coast or sand swept shore, surrounded by peaceful, pastoral farms or set in the heart of forests. Each has its personal attraction corresponding to the individuality and work of its owner and resulting from them. Unique among these artist homes, is one located in the heart of the lake and hill country of New York. Situated on the heights which overlook the clustered roofs and spires of the city of Syracuse and beyond to the lovely, encircling line of hills, stands "Four Winds Cottage" and close beside it the Robineau Pottery, the one the home, the other the workshop of Mrs. Adelaide Alsop Robineau, an artist potter to whom belongs the distinction of having produced the first true porcelain ever made in this country and whose work bears favorable comparison with that of the best potters of France.

Possessed of a strong and forceful personality, not easily daunted by obstacles, she is one of those rare persons who has the wit and wisdom to seize upon every circumstance

and condition and force them to the development of her life work. Emerging from girlhood, she spent the first years after leaving school in the general study and pursuit of art, painting somewhat in water colors and decorating china in a successful manner and with much originality. From the beginning, however, she was dissatisfied with what seemed to her a superficial art, the mere surface decoration of commercial forms produced by others. The potter's instinct and longing, akin to that of the sculptor, to create forms, gradually awakened, but it was not until after her marriage to Mr. Samuel Robineau in 1899, that events shaped themselves for the undertaking of really serious work. Mr. Robineau, while not an artist himself, is, like so many others of the French nationality, possessed of a wide culture and a keen sympathy with things artistic. Under the stimulus of his companionship, judicious criticism and practical assistance, Mrs. Robineau soon relinquished the other branches of work in which she had been engaged and devoted herself to the potter's art.

As an appreciation of native work and a sincere desire for its advancement have scarcely yet sufficiently developed among American collectors to make it possible for an artist potter to live by the sale of his productions alone, Mr. and Mrs. Robineau some ten years ago launched the magazine

Keramic Studio, which coming as it did to fill a long felt want among china decorators, met at once with phenomenal success.

Kept always at a high standard of excellence, this magazine has almost revolutionized the art of china decoration in this country, educating its readers and students by pleasant and gradual steps away from the cheap and commonplace realistic painting of flower and fruit to the more chaste and truly decorative conventionalized type. In addition to this work, in the fall of 1908, they started the publication of a second periodical, *Palette and Bench*, a magazine for art students and crafts workers, which has been received with the highest commendation by artists and critics.

Mrs. Robineau's life is a busy one, full of intense interest; divided between the Pottery, the editorial sanctum, and the hours of recreation, in a garden where three happy children play among the flowers. Nourished in the sunshine of such surroundings, is it any wonder that a purpose to develop and produce a pottery equal to any in the world has taken deep root in her determination and has already brought forth blossoms of achievement which give glorious promise of a future wealth of bloom?

Among the early contributors to *Keramic Studio* was M. Taxile Doat, at that time the head of the Sevres Porcelain Manufactory in France. His series of articles, translated by Mr. Robineau, describes the processes by which the high-fire porcelains of Sevres are made. His processes and recipes were studied by Mrs. Robineau with the utmost fascination and she at once began a series of experiments. She found that the American clays were of very different quality from those used by the French potters, but,

filled with a commendable national pride, and also swayed by the creative instinct of the true artist, she determined not to import her materials, but to experiment with the native clays until she should invent a practical recipe of her own. This she has succeeded in doing and has developed a "body" which, when thrown upon the wheel, responds to her touch and is yet durable enough to withstand the high fires necessary for the production of true porcelain.

A visitor at Four Winds Cottage would have difficulty in deciding which spot is the most attractive. The charming garden with its rose laden trellises, and beds and borders

glowing with color, lies on a hill slope stretching down to an old reservoir, now transformed into a lake and part of the Onondaga Park property. Beyond the meadows and groves of this park rise the heights upon which stands the group of buildings of the Syracuse University. Behind these heights and on every side roll the lovely, wooded hills. Within the city limits and close to the throbbing heart of busy life and yet protected by the calm peace and serenity of the country, one could scarcely imagine a situation better suited to satisfy an artist's craving for natural beauty and

to stimulate the artistic instinct for creation.

The interior of Four Winds Cottage carries out very completely William Morris's precept that a room should contain nothing which its owner does not know to be useful and think to be beautiful. Simplicity, comfort and convenience, nothing for show and all for practical use, are the rules which have guided the designing and furnishing of this home.

The well proportioned living-room is finished and furnished in brown chestnut with warm buff walls and simple, straight voile curtains of a cream tone. Save for the



The living-room in the cottage



Working at the wheel



The kilns in the pottery

ever present jars and vases of flowers the only decorations are a high, narrow shelf running around the entire room, and on one side plain, glass-enclosed cabinets which hold the finished pieces of porcelain in the interval between completion and going forth to exhibitions. So well designed and arranged are the shelf and the cabinets that a group of laughing, romping children gathers for the twilight story hour with never an anxious thought or warning for the frail and precious porcelains on every hand. An alcove of the room containing book shelves and a capacious built-in desk is the retreat where Mrs. Robineau makes up her magazines, and the drawers are overflowing with a fascinating mass of illustrative material, copy and printer's proof.

Though keen interest and intelligent thought go to garden, home and magazine, the real zest and joy of life for Mrs. Robineau lies in the Pottery, a separate building at the foot of the house garden on the summit of the hill. This is a three-story structure, the kiln room occupying the whole first floor, the real pottery and sample-room on the second, with convenient sinks and lavatories, and in the third story, because Mrs. Robineau is a modern American mother as well as an artist potter, there is located a play room, in order that the little ones may be near the mother even when the turning wheel engrosses her attention.

The workroom, with white walls and white shelves, tables and cupboards is full of interest to a visitor. Here in bins is the "body" in different consistencies awaiting the potter's hand and wheel, rows of shelves are piled with molds for drying clays and glazes, and the cupboards are filled with finished forms set aside till the day of firing. A variety of work goes forward at one time. Cement jardinières for the decoration of the garden terrace are hardening in the kiln room, upstairs in the pottery proper, tiles for fireplace of living-room and dining-room are being molded,

an apprentice at a low table in front of a wide window is doing the first rough cutting of a dainty design in a delicate egg-shell bowl, an order for an electric lamp shade in porcelain with crystalline glaze awaits its turn, and at one side

stands the whirling wheel over whose plastic mass the artist bends with intent eye and sympathetic touch, turning and shaping at her will the ever changing form. Some writer has said that no great creative work is ever produced without love. In watching Mrs. Robineau at her wheel one is impressed by the fact that love for her work is a dominant force in her life, and the truth of the saying is surely verified by her achievements. She is wonderfully skillful in the handling of the "body" on the wheel, having been especially successful with the long, slender "fuselé" type. There stands in her cupboard at this writing, waiting for the firing, a vase of this form, of which M. Doat on a recent visit said, that if it comes successfully through the kiln, it will not have its equal in any European museum. He was astonished that

a vase of such height and slenderness had been thrown in one piece upon the wheel. Not only has Mrs. Robineau produced the first true high-fire porcelain of America, but her experiments with glazes have resulted in the development of crystals, which M. Doat acknowledges with enthusiasm are the equal of anything done in France. Mrs. Robineau uses two kinds of glazes, the mat and the crystalline. The mat glaze has a soft and exquisite texture, like the skin of a deer, of the loveliest shades of cream and fawn. The crystal specimens are in a variety of colors, greens, buffs, clear yellows and pure whites.

One of the most beautiful of Mrs. Robineau's completed pieces is an openwork lantern, carved, incised and finished in a mat glaze of soft tan and green upon a cream ground. Upon this piece of work she spent three hundred hours in the cutting and carving alone. This lantern, lighted from within, is a marvel and worthy of a place in any museum.



Fig. 1—Fuselé vase eighteen inches high. Unfinished egg-shell cup and cover. Fig. 2—Fuselé vase fifteen inches high with stand and stopper. Very good example of maize colored crystals.



Fig. 3—A vase and mat of crystalline glazes. Fig. 4—Crystalline glazed vase. Fig. 5—Reddish brown jar; design in border is brown, blue and green. Fig. 6—The viking ship is used as a model in the designing of this vase. Fig. 7—A vase stand and mat of crystalline glazes, in the design of the crab and sea-weed.

Garden Notes

Conducted by Charles Downing Lay

Bedding With Evergreens



VERGREENS used as bedding plants give more year round satisfaction than any other plants, and in the end they are far cheaper to use than cannas and caladiums, though their first cost may be greater.

They are roughly divided into two classes, coniferous, which do best in full sun, and broad leaved, which need some protection from the sun in winter and which will grow and do fairly well in the shade.

Both classes are good to use near the house or at the entrance gates or in any position where the same foliage effect is needed the year round.

Our illustration shows alternate plans for planting one side of a fore court with coniferous evergreens.

In front there is a row of *Thuja globosa* one foot high, a dwarf arbor vitae which soon forms an even border or edging. It is bright in color. Back of this is *Juniperus sabina prostrata* one foot high, a darker green with feathery foliage, which covers the ground completely. Inside the arbor vitae hedge which surrounds the court is *Retinospora pisifera* three feet high, still more feathery but similar in tone.

In one corner there is a group of three trees: *Retinospora filifera* ten feet, *R. plumosa* five feet and *R. pisifera* seven feet, all conical in shape and similar in color and texture. These are surrounded by *R. plumosa aurea*, three feet. In front of these are *Juniperus sabina* twenty inches and *Retinospora obtusa nana* eighteen inches, a dark green, rather stiff and slow growing tree.

The other corner has a group of three *R. squarrosa* different heights. This is light gray green in color, very compact and with feathery foliage. In front are *R. pisifera*

eighteen inches and *R. obtusa* twenty-four inches.

The red cedars, eighteen feet high, can be bought in nurseries for about twenty dollars, or they can be moved from the fields for much less. Aside from these the whole planting should be done for \$250, or it might be done with junipers collected in the fields and with cedars replacing the tall retinosporas for little more than the labor of collecting them.

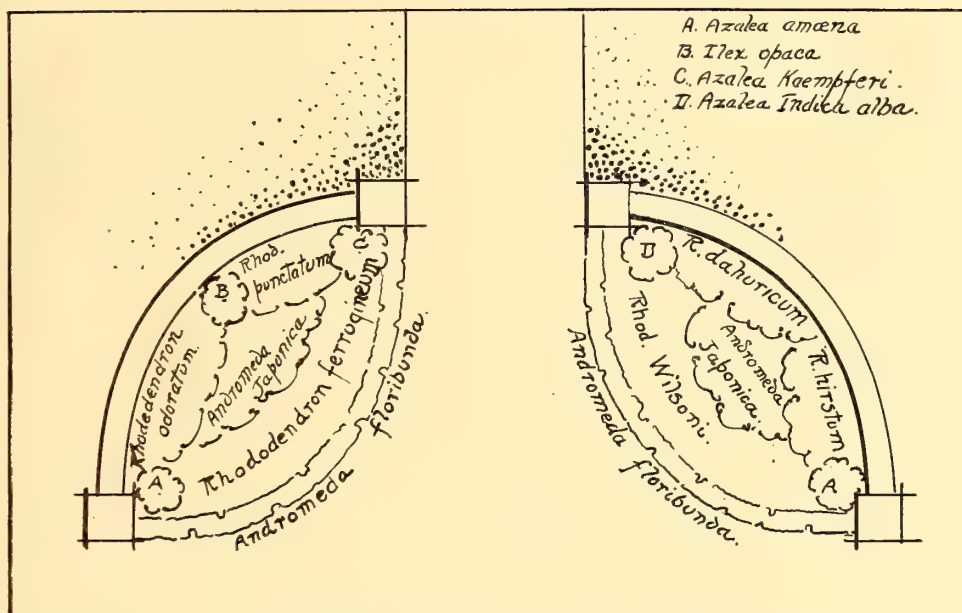
The other plan shows an arrangement of hardy yews surrounded by a hemlock hedge. This is less showy and would cost a little more, but would be more permanent because the yews grow more slowly.

In both schemes the plants should be put so close together that the ground is hidden. After a year or two they will have grown so that they will be too crowded and must be thinned and rearranged. The plants which are taken out should be larger and more valuable than when they were put in, and they can be used in other parts of the place.

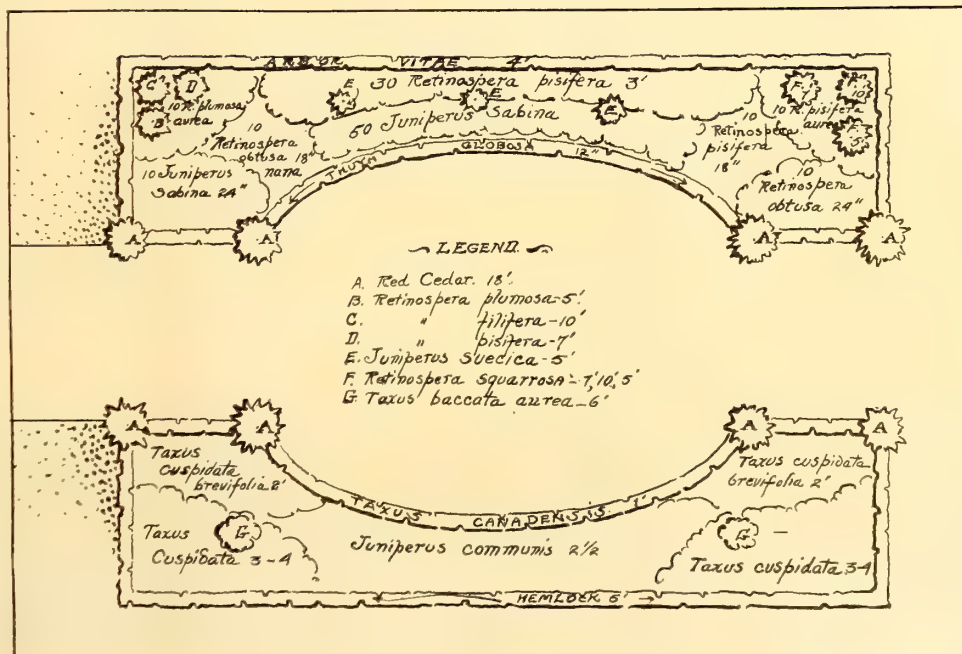
Thus the evergreen bed becomes a sort of private nursery.

They can be enlivened a little by planting Spanish and English iris and many lillies among them. It is well to avoid the blue or silvery plants, and the golden ones in such a planting as this. The temptation to buy them is great, but they are poor things usually and make too gaudy an effect in spring and become too dingy in winter.

The use of small trees in such a planting as this is a mistake. They soon outgrow the planting and are never in harmony with the other plants, nor are they themselves proper plants to use in bedding. The only exception is the mugho pine, which is a very slow growing dwarf white pine, and several dwarf varieties of the spruce. The mugho pine can be used with junipers and retinosporas, but the stiffness of



An arrangement of broad-leaved evergreens



Fore court planted with coniferous evergreens

the young spruce is always jarring when seen in such company.

Another plan shows an arrangement of broad-leaved evergreens for an entrance gate. This will be green throughout the year and in May and June will have many beautiful flowers. Such a planting is better and less common than the ordinary rhododendron hybrids, and is more lasting and no more expensive. At the back are *Rhododendron odoratum* and *R. punctatum*, both with delicate pink flowers. These should be three

feet high. Where the two groups meet there is an American holly (*Ilex opaca*) six feet high.

The edge of the bed is a border of *Andromeda floribunda* one foot high. This has perfect foliage and delicate sprays of white flowers like the lily of the valley, back of this edging is *Rhododendron ferrugineum* eighteen inches high and a group of *Andromeda Japonica* thirty inches high. Large plants of *Azalea Kaempferi* and *Azalea amoena* are set in front of each post.

The other side is similar, but different plants are used to give the same effect. This planting could be done for a hundred dollars a side.

Many other delightful arrangements of evergreens can be made, and if one is really interested in broad-leaved evergreens one would probably try such difficult and interesting things as the *Andromedas* (*A. calycalata*, for instance), the *Rhodora*, *Daphne* and *Mahonia*. *Leucothoe Catesbaei* is a low growing shrubby evergreen, two to three feet high, with white flowers at the ends of the branches. It is good in large masses and might have *pachysandra* for an edging.

If one is far enough south, specimens of *Aucuba Japonica* might be planted with the *Leucothoe*. South of New York, of course, the possibilities are greater. There many lovely evergreens can be grown which we in the north know only by their reputations.

August, as is now well known, is a good time to move evergreens, especially if they be shipped with balls of earth done up in burlap. The chief advantage of August planting



A good arrangement of Junipers, Arbor vitae and Retinospora

is that there is not much garden work to be done then and more time can be given to it than in the spring when so many things needs looking after.

Broad-leaved evergreens can be planted in September or October with as good success as in the spring. In fact, they can be moved at any time when the ground is not frozen.

PERENNIALS FROM SEED.

The seeds of many perennials can be sown now and the plants

will be big enough to bloom next summer.

The easiest way for most people is to sow them in boxes or flats, 16x24 inches in size, and three inches deep. They should have holes in the bottom for drainage, and should be filled to within an inch of the top with good potting soil carefully sifted. The seeds are sown broadcast or in small hills, soil enough to cover them is then sifted over, watered gently, and a little more earth sifted on to prevent the soil from caking.

When the seedlings are large enough to handle with the blade of a knife for a trowel, they are transplanted to other flats. In two or three weeks or a month they should be large enough to transplant to their permanent positions in the garden or to a cold frame where they can stay all winter.

Generally the best time to sow the seed of perennials is as soon as it has ripened on the plant.

Hollyhocks, larkspur, foxgloves, lychnis and many others sow themselves if undisturbed.

The seeds which stay on the plants a long time after ripening are the ones which must stay in the ground a season or two before germinating.

It is a comfort to be starting next year's garden now, because it means so much less work next spring and so much better results in the summer.

The labor of sowing and transplanting in flats is much easier than in a seed bed, because the flats are easily handled, can be carried anywhere, and one can do the work standing or sitting.



Autumn Work in the Garden

By Ida D. Bennett



THE coming of the frosty nights of fall ushers in one of the busiest seasons of the year in the garden. Until the early frosts have laid low the flowers not very much can be done in the way of relaying beds, remarking paths, planting bulbs, and transplanting of hardy perennials, but with the first touch all this is changed and a season of activity begins, only second to that of spring, which rarely ceases until severe weather makes outdoor work impracticable. Especially is this the case when the warm weather lingers late into October and the fall work is much belated. Usually, however, there is a long season of fine weather, often extending into November with warm sunny days, which makes the fall work one of the most pleasant occupations of the year.

As early as they may be obtained of the florist, those bulbs which are to be planted in the fall should be put into the ground; this includes the tulips, hyacinths, crocus, scillas, camassias, ixias and all the hardy lillies except candidum—which should be planted in August.

Beds of hardy perennials may be taken up and divided at this period and so save much time in the spring when time is at a premium. Many hardy perennials seed freely and volunteer plants will be found coming up among the established clumps and may be lifted and placed where it is desired for them to remain, or, perhaps no further increase of those particular plants may be required and the fall is a good time to eradicate superfluous plants and by turning over the soil prevent the germination of much of the season's seed which has fallen into the earth. Hardy phlox is quite apt to perpetuate itself to an embarrassing extent and when once established in a garden constant vigilance is required to prevent it occupying the ground to the detriment or extinction of other plants. The phlox is especially annoying when it invades the peony beds, as it comes up between the roots of the latter where it is extremely difficult to dislodge. The *Physostegia* is another plant which is likely to need its boundaries circumscribed, as it spreads rapidly, as does the golden glow and in a similar manner; fortunately both are easily kept in check by removing the too venturesome plants. Not so, however, the *bocconia* which runs under ground, making a flesh rhizome throwing up plants at every joint and, as the smallest piece left in the ground will produce a vigorous plant, fall digging about the roots is always profitable.

The various iris may be lifted and divided at this time with advantage; old clumps which have been growing in the same space for several years will be found to contain much old, dead root and this should all be removed, replanting only that which is alive and growing.

The fall is an excellent time for laying out new gardens and paths and for repairing old paths and fences. It will often be found that an hour's work on a fence or trellis or summer house will put it in shape to stand the winter and be in readiness for another season's usefulness while the lack of it may mean its destruction in some winter's storm.

The hot-beds and cold-frames should come in for their share of attention at this time and if it is desired to start the hot-beds very early it will help somewhat to excavate them in the fall, piling the earth under the shelter of a shed or covered with boards to shed rain and closing the beds against the weather. All sash that is to be used during winter should be looked over and if in need of paint or

glazing should be attended to at once. Cracks in the cold-frames should be closed or calked in some manner and such covering as they will be likely to need gotten in readiness.

In some place free from frost and readily accessible, a supply of potting soil should be stored against any sudden demand in winter or early spring. Good mellow loam, leaf mold, sharp sand and well rotted manure, combined into a compost according to the needs of the plants likely to require potting, will be what one will likely need, and a certain amount of each separate variety of soil should also be at hand. Sphagnum moss for drainage and for starting bulbs in early spring; pebbles, broken charcoal, pieces of pottery and the like for drainage and suitable stakes for supporting such plants as may need it should be provided against such times as there may be a call for them.

Plants which are to be used in the winter window garden should be lifted before frost has touched them and brought indoors before fires are started so that the change to the indoor atmosphere may not prove too trying; before lifting bedding plants give them a good watering the night before that they may lift with a good ball of earth about their roots. It will, also be of benefit if the plants are cut around by thrusting a long carving knife deep in the ground beside them, making the cut about the size of the pot which is to receive them; this should be done a week or more before they are to be lifted so that the severed roots may have begun new growth; they will, then, continue to grow in spite of having been disturbed.

Clear away all dead litter from the flower beds and paths. All dead annuals should be pulled up and consigned to the compost heap; tops of summer blooming bulbs should also be consigned to this common receptacle.

Gladiolus bulbs should be dug before the ground freezes hard and placed in some warm, sunny place to ripen. The cannas—which are better left in the ground until the last moment, should have their roots well protected by heaping up dry leaves over and about them and covering these with boards, canvas or old carpet to shed rain. Dahlia bulbs may be dug any time after frost has cut down the tops, but such tender bulbs as ismines, tigridias, tuberous begonias, gloxinias and the like should be lifted before touched with frost and stored in a warm, dry place during winter.

The late fall months is a good time in which to wage war on the various insect pests which devastate the summer garden. Most of the caterpillars which feed on the plants, form chrysalides which are buried in the ground near the plants on which they feed, or are found attached to the underside of boards, rubbish, steps and the siding of the house and, wherever found, should be promptly destroyed.

The white and yellow butterfly—the progeny of which is so troublesome on the cabbage and cauliflower, makes a triangular white chrysalid, without any cocoon, which it attaches to the underside of clapboards of buildings and other convenient shelter, often at considerable distances from its haunts. The hickory tussock moth—so destructive to the foliage of the maple and hickory trees, will be found a slender brown chrysalid encased in a woolly brown cocoon, under steps, boards and rubbish. The curious chrysalid of the tomato worm—a smooth brown case some two and a half inches in length and about the size of one's finger, with a curious, handle-like attachment, which, by the way, is the shield of the wonderfully long and sensitive tongues of the moth which shall ultimately emerge from its little earthen coffin, is found a foot or more in the ground in infested

sections of the garden. Plowing or digging the vegetable and flower gardens at this time of the year tends to destroy an incalculable amount of insects and to render life far more equable for the gardener another season.

The shrubs, hardy perennials and conifers should all be heavily mulched with old, well rotted manure at this time of the year, both for their protection and nourishment. The snows and rains of winter will carry the nourishment down into the roots of the plants and the decaying matter will add humus to the soil.

Of course well-kept lawns will be cleared of all fallen leaves and rubbish and the grass cut rather closely as late in the fall as possible, leaving the clippings on the ground. This does away with the long grass which adds so much to the labor of clearing the lawn in the spring. A top dressing of very fine old manure the last thing in the fall or early winter will add materially to the quality and abundance of the grass the coming season or, if there are objections to the presence of barnyard manure in the vicinity of the house, a rather coarse bone meal may be substituted.

All summer tools should be looked over and put in working order before being put away for the winter. Especially is this desirable in the case of lawn mowers, which should have all metal parts oiled or given a coat of vaseline to prevent rust, before being stored in a dry place. Lawn rakes should be hung up where the teeth will be safe from damage, as bent teeth in a lawn rake are a nuisance and are inefficient.

Set the mole trap at this season; one mole caught now is worth half a dozen caught in the spring after they have begun to breed. If left undisturbed, expect disaster to the lily and bulb beds by spring.

Seeds of many varieties of flowers may be sown at this season advantageously and will do better than if the sowing is delayed until spring. Poppies, foxgloves, canterbury bells, English daisies, candytufts, sweet alyssum, nicotianas, petunias and the like may be scattered broadcast over

soil which has been made fine and soft, and if the ground is then given a light rolling with a lawn roller or pressed with a piece of board, that is all which will be required—except to strew some light litter over them for winter protection, evergreen boughs being about the best litter which can be used. Care should be taken in sowing the seed to scatter them as thinly as possible.

The manure barrel which has done duty all summer should now be emptied and the contents spread on the rose beds or shrubbery borders where it will be of use, and the barrel stored in a dry place over winter; it will form a safe and convenient receptacle for wood ashes which in February will be spread beneath the evergreens or about the roots of the fruit trees.

Beds which have been infested with moles should have the earth forked over to break up the runs or they may be tramped down and raked over; left unbroken they offer runways for field mice and other vermin which feed on the bulbs and the roots of the plants. The condition of all water pipes, stand pipes and hydrants should be looked after and the water left out of all surface pipes and tanks. Hose should be drained of all moisture and stored in a frost-proof place for the winter, and if the watering pots are given a coat of paint inside and out their usefulness will be much prolonged, especially if the precaution is taken of hanging them up in a dry place for the winter. All these little things make for economy and leave a wider margin to devote to the purchase of seeds and plants for the garden the coming spring.

If bedding plants have been lifted from the beds, leaving unsightly holes, these should be filled up and the beds leveled off and not left to fill with water and to present an unkempt appearance throughout the winter. The neat appearance of the lawn and garden throughout the winter will do much to rob the season of its dreariness and gloom and nothing is more discouraging than dismantled flower beds left torn up and covered with debris.

Fences, Walls and Hedges

(Continued from page 337)

cobblestones, the best results can be obtained by selecting odd sizes and colors—the larger the stones the better—and putting them together “hit and miss.” In building stone walls, too many people pick the stones with careful precision, choosing those of uniform size, then cementing them together “just so.” In such a wall there is neither character nor expression. It is like an insipid face with a “set” smile.

With houses of shakes, shingles, rustic clapboards, field stones or logs, the fence motif may be of great variation. The wire fence, five or six feet high, with mesh close-woven enough to keep out the neighborly chickens, as well as friendly pigs and cows, is immensely popular. Supported by green-painted posts, and covered with vines, it forms a luxurious green wall that will blend with any landscape, and almost any home site. It is inexpensive and durable. For preserving wood fence posts the best plan is to scorch the portion that is to go in the ground. While still hot, throw a wet sack over it, for the double purpose of steaming it and putting out any possible sparks. After that, dip it into asphaltum, and you will have a fence post that will last almost forever, one that will be impervious to worms, bugs, or decay. Field stones or cobblestones, loosely piled without using cement, make interesting country fences. While they are a bit crude, their naturalness and lack of artifice always appeal to the passer-by. A low brick wall, hedged

at the back is often seen, as is the evergreen or shrub hedge. In localities where timber abounds, the rustic fence of bark-covered logs or branches, has great possibilities. A huge stump here and there along the fence line, as if carelessly dropped, increases the interest of the scheme, while wild ferns and other woodsy growths planted at the base, make it seem comfortable and “at home.” An old-fashioned rail fence harmonizes with the rustic house, but to be wholly pleasing, it should be partly overgrown with vines. In fact, after man has finished his work, Nature is usually called in to add the finishing touches, graces and perfumes.

When an estate, or a city lot for that matter, is surrounded by a fence, wall or hedge, the whole should climax in street and walk entrances. These should be designated by monuments of timber, brick, stone, cement, or iron. Wood, copper, or iron lamps or lanterns set on top the entrance monuments, are attractive in the daytime, and cheering at night.

There is an immense amount of sentiment or un-sentiment expressed in fences, hedges and walls, far more than the casual observer would imagine. The imposing, formal wall affects one as does the dignified, reserved person, who keeps his best within himself, and while he may not intend to do so, makes you feel unrested and ill at ease. After all, it is the wall of simple, frank construction, with openings for light and bloom that reaches farthest into your heart,

The Hydrangea

By Eben B. Rexford



ALL our shrubs, perhaps the hydrangea enjoys the greatest popularity at the present time. No shrub of which I have any knowledge so readily responds to good treatment.

The merits of the plant are many. It is among the hardiest of all shrubs. I have never known it injured by the winter anywhere in the north when entirely unprotected. It develops rapidly, the small bush of this year's planting becoming quite a shrub by next season if placed in good soil. It blooms late in the season, and its flowers last till cold weather comes. Not as attractive as when in their prime, in September, it is true, but still enough to challenge admiration from the visitor who finds little else remaining in the garden to admire.

The hydrangea, because of its size, is eminently fitted for use as a background for smaller shrubs to display their charms. It is an easy matter to secure a growth of six feet from it. It can be planted in rows to serve as a screen or as a substitute for a hedge. It is most effective, however, when grouped in prominent locations, as shown in the first illustration which accompanies this article. Single specimens, however, are very ornamental, as will be seen by the second illustration.

In grouping the hydrangea, a large number of plants should be used. They should be set about two feet apart, each way, at first. By the third year every other plant can be removed, if deemed advisable. The aim should be to secure a dense growth without unduly crowding the plants. If any open spaces appear, they can easily be filled by training some of the young branches into and across the gap, and tying them there until they have become fixed in the positions you want them to occupy. Every spring, the bushes should be gone over with the pruning-shears, and cut back sharply. I know of no other shrub that requires closer pruning. It must be given each season if you would have your group take on a compact, symmetrical shape. Left to itself, many of its branches will get the start of others, and the result will be far from pleasing. But a close, systematic shearing of each bush, cutting it back at least half each season, will keep it in satisfactory form. The weak branches may bear flowers, if left, but their flowers will not be the large, heavy clusters which you depend on for the best possible effect.

Hand in hand with sharp pruning must go a yearly enrichment of the soil in which the hydrangea is planted. A

generous amount of manure must be used, because what you are after is a strong, vigorous growth of new branches, and such a growth will only result from high feeding. Barnyard fertilizer is perhaps better than any other, all things considered, but if not readily obtainable, the commercial fertilizer will give good results. Work whatever food is applied well into the soil about the roots of the plants. Do this in early spring before they begin to make growth. Do it when you give them their spring pruning.

The flowers are always borne on new growth, hence the importance of having this growth as strong as possible. When plants are grouped they should be encouraged to produce a good many branches close to the soil. There should be enough of these to reach up and spread out on all sides, until the bushy, compact effect is secured.

When the hydrangea is trained as a standard, it must receive quite different treatment from that which is given grouped plants. Only one or two stalks should be allowed

to grow from the roots. I would advise two, so that, in case of an accident to one, the plant would still be in shape to go ahead without unnecessary delay. Keep down all other shoots that start from the roots. When these stalks have grown to the height of about two feet, nip off the tops. This will cause side branches to start. Do not allow all that start to develop. If you did, you would have more branches than are needed at this period of the plant's development. Keep in mind



A bed of hydrangea paniculata

the fact that you are now forming the framework of the shrub, so to speak, and for this you need a few strong branches rather than many small ones. When you have secured a sufficient number of these large branches, the small ones will come, as you need them. If the plant seems inclined to grow in a too upright form, set stout stakes about it, and tie its branches to them in such a manner that they spread out, instead of up, and keep them tied until they have "set" into the spreading form you desire them to take. To secure all these results will call for a good deal of attention, but the end in view is well worth all the trouble taken, you will conclude, when you have a specimen five or six feet high with a proportionate spread of branches; each branch bending under the weight of clusters of ivory-white blossoms, much more graceful in every respect than the old snowball, to which this shrub seems to be the successor. Later on, these flowers will take on a pink tinge, subsequently turning to a brownish green, which will remain until



Hydrangea paniculata in full bloom

the frost freezes all color out of them, and they drop.

A plant trained as a standard must be pruned sharply each spring in order to keep it in a satisfactory condition. Unless this is done, there will be many slender, weak branches instead of the strong ones on which large clusters only are borne.

One good standard specimen, in a prominent place on the home-grounds, will afford vastly more satisfaction than shrubs of ordinary habit, whose flowers are, perhaps, more beautiful, but which lack the strength and dignity which characterize the hydrangea.

Too much stress cannot be laid on the importance of high feeding. While, as has been said, the plant will live on indefinitely in almost any kind of soil, it cannot do itself justice and satisfy its owner unless it is given a liberal amount of rich food. Those who have grown it in the way ordinary shrubs are grown—



Hydrangea makes a fine shrub with masses of green growing plants



Hydrangea paniculata grandiflora

which, being translated, means more or less neglect, have only a weak idea of the possibilities of the shrub under good culture. This fact was quite forcibly illustrated last season, on my own grounds. A lady visitor went into raptures over a group of which I was quite proud. She had never seen anything like it before. It must be that I was growing a superior variety. Where did I get it? She must have the same kind. It turned out that she had bought her plants from the same dealer I had patronized, and in the same season. The difference in appearance was accounted for by the difference in treatment.

The hydrangea is extremely effective when planted among other shrubs, as will be seen by reference to the third engraving, where non-flowering shrubs afford a fine background for the display of its enormous clusters of ivory-white blossoms.

There is no shrub that presents more

delightful results for planting, either in masses or singly, than the Hydrangea, and it is little wonder that a shrub so boldly decorative in its outline and character, and bearing plume flowers of such exquisite coloring should find so welcome a place in the hearts of all true lovers of plants and flowers.

It is one of the finest shrubs for outdoor culture and is one of the best varieties of shrubs to use for ornamental bedding or about the home grounds.

A study of the illustrations will reveal some of the most interesting ways of using them, and how effective developments of the shrub may be attained. Although one of the chief charms of this shrub lies in its coloring, it is not to be regretted that constancy is not its characteristic, for its varied changes of tint, from the beginning of August to the late fall, are beautiful.



CORRESPONDENCE



The Editor of *American Homes and Gardens* desires to extend an invitation to all its readers to send to the Correspondence Department inquiries on any matter pertaining to the decorating and furnishing of the home and to the developing of the home grounds.

All letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this Department.

Problems in Home Furnishing COLORS FOR A DARK BEDROOM

"IN THE apartment into which we are to move this fall, the room which our guests will occupy opens into a court. There are two windows but no direct light, and as the woodwork is stained a deep brown and the walls are papered in green, you can imagine the general effect is not at all cheerful. My general idea for this room is to have it up-to-date in its fittings and attractive in color effect. Can this be accomplished with only \$175.00? A bathroom adjoins the room, so there will be no expense incurred for a washstand."—K. H. C., Chicago.

The proposed outlay will be sufficient if moderate-priced furniture is selected. In a large city there are often opportunities to buy furniture of good make at surprisingly low cost. Two single beds of white enameled iron with rounded head and foot and no brass trimmings, may have flat springs and felt mattresses at about fifty dollars. Pillows, sheets, pillow cases, blankets, comfortables and spreads will add thirty dollars. A dresser and somno for thirty dollars, side chairs and cushioned willow armchair for twenty dollars, rugs for twenty dollars, will leave twenty-five dollars for a costumier trunk rest, curtains and pictures.

If possible to include the repapering of the room in the allotment, it would be the largest element in making an attractive interior. Under the conditions of lighting, a yellow or buff paper would contribute the best color tone. The curtains may be of yellow and white madras, and the rugs of yellow, green and white. The beds may have covers of cretonne with yellow flowers in the design and the blankets may be bordered with yellow stripes. The willow chair may be stained brown and the cushions covered with the cretonne. If an electric attachment can be carried to the somno, or night table, a small portable lamp may be installed. A tray for holding a glass and pitcher of drinking water should not be forgotten in the smaller adjuncts for comfort.

DRAPERIES FOR AN OLD-FASHIONED BEDROOM

"I am renewing the bed draperies and window curtains for my bedroom, and write to ask if you can suggest anything that is very quaint and unusual in coloring? I have used chintz with a bird design for the last five years with wall paper to match, and the combination has not been restful. My bed is of large size with carved posts, but no canopy. There are two windows of ordinary size, and a dressing table requires drapery. I will change the wall paper if you can assure me the result would repay me."—Mrs. C. W., Pittsburg, Pa.

The copies of old Persian prints that are made in England would give a quaint

charm to this bedroom, enhanced by a light-toned, unobtrusively designed wall paper. The cotton prints come in six different colorings in sizes adapted for bed spreads, table cover and window curtains. The latter could be used for draping the dressing table, and also as a valance for the bed. The combinations of color in the cotton prints are, in themselves, suggestive for a color scheme for an entire room, and much of their artistic value lies in the softness of their tones.

With old-fashioned furniture the straight curtains hanging to the floor of the cotton print may be supplemented by short curtains to the sill, made of white embroidered muslin. The latter may either be caught back at the sides of the casement or allowed to hang across the glass. The top of the dressing table may be covered with the printed material, overlaid with a piece of plate glass. The glass is thick and cut to fit the edge or curves of the table. Silver or crystal candlesticks may be kept on the dressing table, with silk shades or shields.

RECLINING CHAIR FOR A BEDROOM

A request for information about a lounging chair for a bedroom in a summer home comes from a reader in Vermont. The room is described as not being large enough for a lounge, yet requiring some kind of a reclining or resting chair.

A new design this season in rattan would exactly meet this correspondent's desire. In size, the chair corresponds to the well-known Morris pattern, with a similar adjustable back. An extension to support the feet slips under the seat when not in use. The chair is light in weight, compact in shape and made on good lines. A pair of down pillows, twenty-two inches square, may be adjusted in the seat or at the back, as preferred. These should not be fastened to the frame. The chair costs fifteen dollars.

WRITING DESK FOR A PHYSICIAN

A physician asks if there is a writing desk made in mahogany that will look better in his office than a roll-top desk. "My bookcases," he writes, "are of the sectional variety, and cover most of the wall space. I would place the desk or table in the middle of the floor if it was of the right style. I would like this room (which is not a private office) to be attractive in the evenings for small gatherings of medical men."—Dr. B. T. H., Syracuse, N. Y.

A writing table that is reproduced from the one used by George Washington and was called by the First President's name, would suit the requirements of this physician's room. The drawers may be opened from both sides, and the pigeon-holes for envelopes, paper and magazines are attached to the two ends, and not at the back.

The desk, or table, is made of mahogany, in sizes from four feet six inches to six feet.

Garden Work About the Home PLANTING AROUND A BUNGALOW

THE photographs which R. S. sends show an unusually nice bungalow, rather unfortunately placed on the highest part of the lot. It seems to be balanced on the ridge like a rocking stone and the west porch, on the side toward the road, is very high, almost six feet above the ground.

To build a terrace there with a bank wall as R. S. suggests would be very expensive, and it is doubtful if it would look well when done. Instead I should plant a good wide border of shrubs so that the slope of the lawn would be carried up gradually to the level of the piazza. This planting will hide the ugly underpinning of the house, as well as reduce the apparent height of the whole building.

For this planting you might use a double row of forsythia at the back, then two rows of Van Houttes spiraea with a row of *Dentzia grasilis* in front.

At the south of the house, however, you might build a terrace eighteen inches lower than the piazza floor. This would mean scraping off the highest part of the ridge to fill on each side making a convenient level place. This terrace would be nicest if supported by a wall, but a sloping bank planted with shrubs and a hedge of *Ibota privet* at the top would do very well.

To give shade on the west side of the house, I should prefer two or three pin-oaks.

GERANIUMS FROM CUTTINGS

J. S. B. You will find that it is much better to take slips or cuttings of young geraniums rather than to use the big plants in the house next winter.

Geraniums are easy to slip (as they say in the country). A branch about six inches long should be cut off, the large leaves stripped from it and then stuck in a pot of earth so that there is only four inches above the ground. The earth should be rich soil and sand mixed half and half. If this is done early in September the plants should grow roots in two or three weeks and be ready to repot. By the time hard frosts come they should be in their permanent pots and ready to take into the house. They will be strong and thrifty plants and will bloom well all winter long.

THE ASPARAGUS BED

D. L. You should cut the stalks off your asparagus and burn them as soon as they begin to turn yellow. Burning is important because it destroys insects and the seeds. Seedling plants of asparagus are the worst weeds that you can possibly get in an asparagus bed, and if they come in any quantity they have to be dug up and picked out by hand.

Late in October the bed should be covered with six inches of long manure—first throwing a little earth up over the plants so that the stalks will come up blanched next spring.

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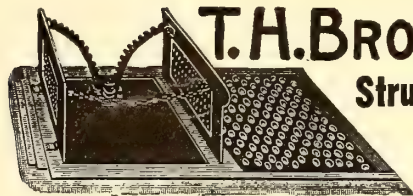
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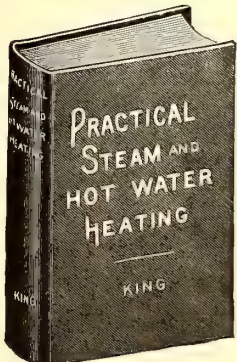
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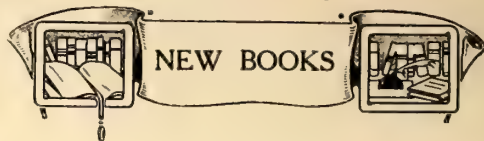
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CATALOGUE OF THE WORKS OF ART BELONGING TO THE CITY OF NEW YORK. New York: Prepared and issued by the Art Commission of the City of New York, 1909. Large 8vo.; pp. 241.

The City of New York began its valuable collection of portraits in 1790 by requesting Gen. Washington to permit Mrs. Trumbull to take his portrait to be placed in the City Hall as a monument of the respect which the inhabitants of this city had toward him. Since this time the city has been acquiring works of art of all kinds. Technically these works of art are under the charge of and they are passed upon by the Art Commission of the City of New York. The constitution of this commission is most admirable. Its present members are: Robert W. DeForest, Frank D. Millet, John B. Pine, George B. McClellan, A. Augustus Healy, John Bigelow, Arnold W. Brunner, Charles Howland Russell, Fred B. Pratt, and Herbert Adams. Thus we have artists, sculptors, officers of literary and artistic societies and museums, as well as a painter and a sculptor. If it were not for this estimable body the city of New York would have foisted upon it most atrocious works. This commission is an artistic safeguard of the city. The book is a beautiful one, magnificently printed, and it gives a complete *catalogue raisonné* of all the works in the possession of the city, numbering several hundred. The plates are superbly executed.

SPRING FLOWERS AT BELVOIR CASTLE. By W. H. Divers. London: Longmans, Green & Co., 1909. 8vo.; pp. 193. Price, \$1.80 net.

Belvoir Castle is one of the finest country seats in England. The author is head gardener to his Grace the Duke of Rutland. Owing to the large number of inquiries which he has received concerning the cultivation of the spring budding plants in this garden he has been induced to write this beautiful little book, which is a charming exposition of what landscape gardening really means. The author hopes that many others will be led to cultivate these interesting and beautiful plants more extensively, and thus make their gardens more beautiful in the early months of the year. These hardy plants appeal to a large number of persons, not only because of their beauty when seen in a mass, but because of their low cost and the small amount of labor required to take care of them during the summer months and for transplanting them in autumn. Thus they are adapted for everyone who has a garden. The illustrations are from photographs taken by the author. They show that he is not only an expert gardener, but a photographer of no mean order.

CASTLES AND CHATEAUX OF OLD BURGUNDY AND BORDER PROVINCES. By Francis Miltoun. Boston: L. C. Page & Co., 1909. 12mo.; 333 pp. Price, \$3.

The old Burgundian Province was closely allied topographically, climatically, and by ties of family with many of its neighboring political divisions, and it is for this reason that this section of France is of particular interest. Not in the royal domain of France itself, not in luxurious Touraine, were there more of splendor and the costly trappings of the ceremonial of the Middle Ages than in Burgundy, which

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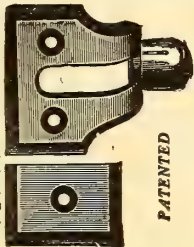
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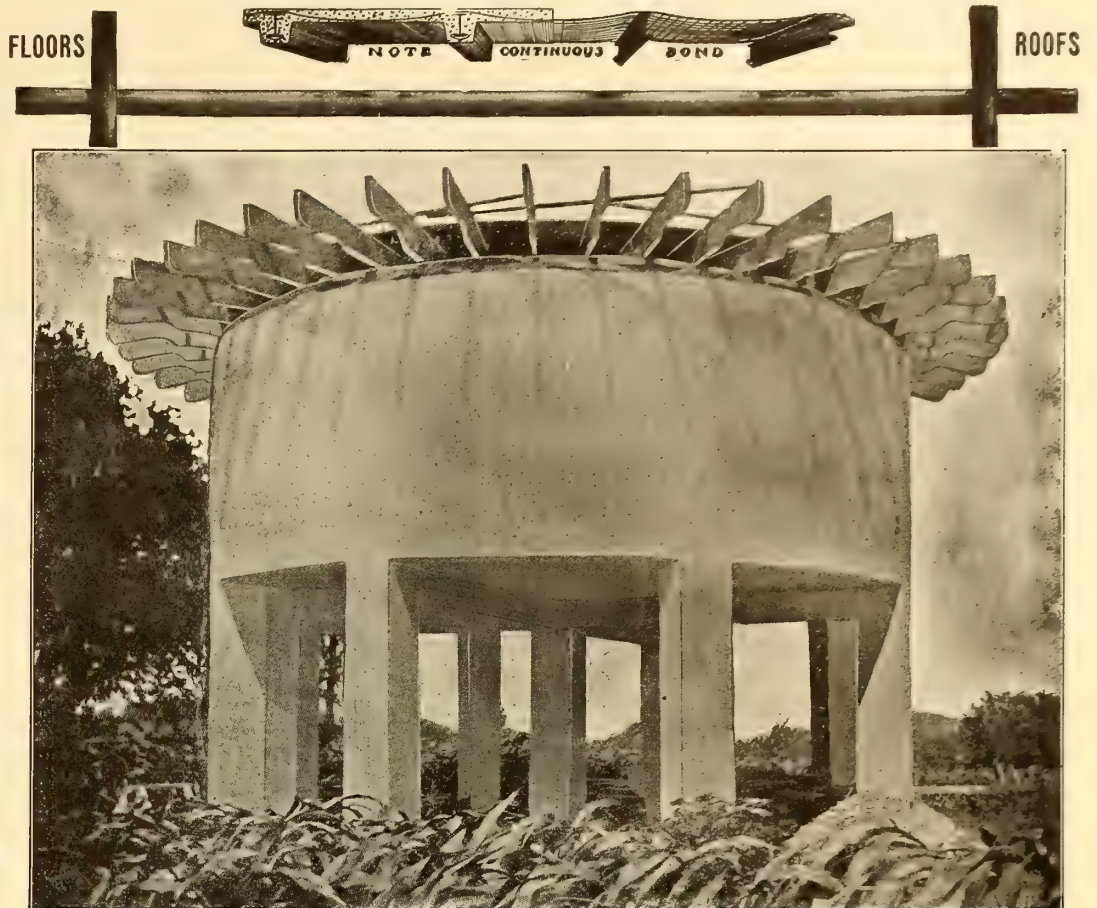
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POWER, HEATING AND VENTILATION. A Treatise for Designing and Constructing Engineers, Architects and Students. By Charles L. Hubbard, B.S., M.E. Part I., Boiler Room Equipment; first edition. Brattleboro, Vt.: The Technical Press, 1908. 8vo.; pp. 216. Price \$2.

The matter contained in this volume had its beginning in a pocket note book, which in turn served as a basis for articles which appeared in the Technical Press from time to time. Occasional calls for reprints of these articles led the author to select those having the most practical value, and to combine with them others to form sufficiently new material to make up a treatise on power and heating plants. The subject of power is treated more especially from the steam side, but there is also reference to the requirements of electric lighting and the distribution of electric power. No attempt has been made to cover central station work, but plants similar to those found in factories, office buildings and institutions. The illustrations are excellent, the wax process being used exclusively.

THE WONDERS OF THE PLANT WORLD. By G. F. Scott Elliott, M.A., B.Sc., F.L.S., F.R.G.S., etc. Philadelphia: Lippincott Company, 1910. 12mo.; 155 pp. Price, 75 cents.

The titles of the chapters of this book are as follows: The Activity of Vegetables; On Savages, Doctors, and Plants; A Tree's Perilous Life; On Forests; Flowers; On Underground Life; High Mountains, Arctic Snows; Scrub; On Tea, Coffee, Chocolate, and Tobacco; On Deserts; The Story of the Fields. Many of them are of entrancing interest. One of the interesting bits which we glean from it is that there are 173,706 species of plants, namely; 105,231 flowering plants; 2,819 ferns; 565 horsetails and club-mosses; 4,609 mosses; 3,041 liveworts, 5,600 lichens; 39,663 fungi, and 12,178 seaweeds. These figures are for 1892, but since that time many new species have been described, so that we may estimate that nearly 200,000 species are now known to mankind. This is a sample of the many interesting features which this book has to offer.

PRACTICAL ENGINEER ELECTRICAL POCKET BOOK AND DIARY FOR 1910. London: Technical Publishing Company, Ltd. 16mo.; 570 pp. Price, cloth, 1s. net; leather, gilt, 1s. 6d. net; postage 2d. extra.

This welcome annual visitor contains as usual valuable statistics, data, rules, tables, formulae, etc., and should be in the hands of all who are interested in electrical matters.

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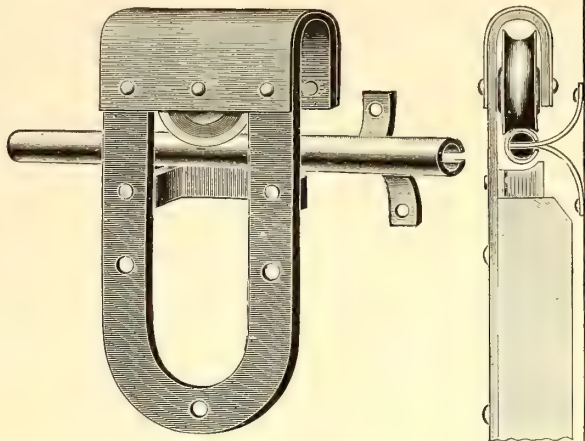
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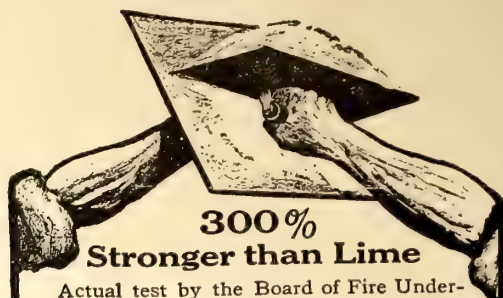
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Thus it comes about that the more close is the jointing of a wall, the finer should be the grain of the mortar, and of its aggregate. A coarse rubble wall having wide irregular mortar joints would be best with a mortar made of a fine gravel or crushed stone, or, at least, with one which contained a considerable amount of pea-sized lumps as well as finer sand among the aggregate, to assist in filling up the larger hollows without undue liability to settlement. On the other hand, for well-dressed ashlar masonry, the finest sharp-grained sand obtainable should be used, there being only very small cavities to fill up, and the very thinnest possible joint being required.

Beyond this, it is necessary in all cases that the aggregate should, under a magnifying glass, display either sharp edges or a roughened surface or both, in order that the matrix may adhere to it; for, while there is little necessity to stick the bricks of a wall together, if they be properly laid, it is quite necessary that the mortar should form in itself a homogenous substance, else it will crumble into dust or wash out of the joints. Chippings of a soft stone crushed in a mortar will form an excellent aggregate, when obtainable, especially if sifted to various grades of fineness for different work; and old bricks similarly crushed are even better, as being rougher in texture. Sharp pit-sand is, perhaps, most commonly specified, but it should be really sharp, and no, as is frequently the case, rounded by attrition—in reality, from the bed of an old river, though now dug from a pit. In the same way it should be free from salt, and pit-sand from a prehistoric sea beach is sometimes as salt as that gathered on the existing shore, for salt attracts moisture, and a wall built with salt sand in the mortar will scarcely ever dry.

For the same reason sea water must not be used for mixing; but this objection against the use of sea sand and sea water disappears in the case of many boundary and retaining walls, which need not become dry, though the result of their use is frequently an unsightly fungus-like efflorescence on the face of the wall.

So far as the matrix is concerned, an ordinary mildly hydraulic ground stone lime is in almost universal use for ordinary building. Pure or poor limes are alike unsuitable, having no setting property, but merely drying, and being consequently easily washed away by rain; and, although some prefer to reduce their lime to powder by slaking, it is much better to buy it ready-lime day by day as it is required, the usual proportion being about three measures of sand to each measure of lime.

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measures of sand per measure of lime for ground and to mix the sand with the hot good work, but it is doubtful whether the resulting mortar is greatly improved. On the other hand, if plaster of paris be mixed with the lime, a greater proportion of sand can be carried without loss of strength, though it is hardly worth doing, owing to the extra cost of the plaster and to its solubility.

If a stronger mortar be required, as in very thin partition walls, or in weight-carrying piers, Lius lime should take the place of the ground stone lime, or else Portland cement should be used. With cement as the matrix the proportion of sand may be raised to as much as six to one in almost all cases. Cement mortar must only be mixed as required, a little at a time, else it will commence to set before it is finally worked up with the trowel before use, and if this occurs, its strength becomes greatly impaired.

Coloring substances ought not to be mixed with mortar, particularly if they are of an earthy nature, like the umbers and ochers, but a dark mortar, very suitable for the facing of red brickwork, can be made by using blacksmith's ashes or foundry sand in place of ordinary yellow sand.

Lime mortar is best mixed in a mortar mill, the sand and lime being shoveled in as it revolves, three spadefuls of one to one spadeful of the other, only just enough water being added to bring the whole to the consistency of porridge; but cement mortar having to be made in small quantities, must be mixed by hand. Like cement concrete, it should be mixed dry, the water added through the rose of a watering pot, and then mixed again with wet.

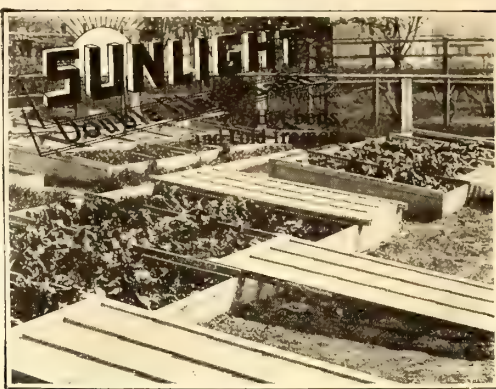
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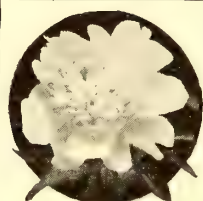
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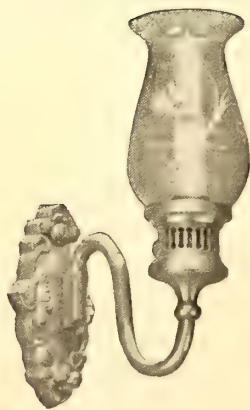
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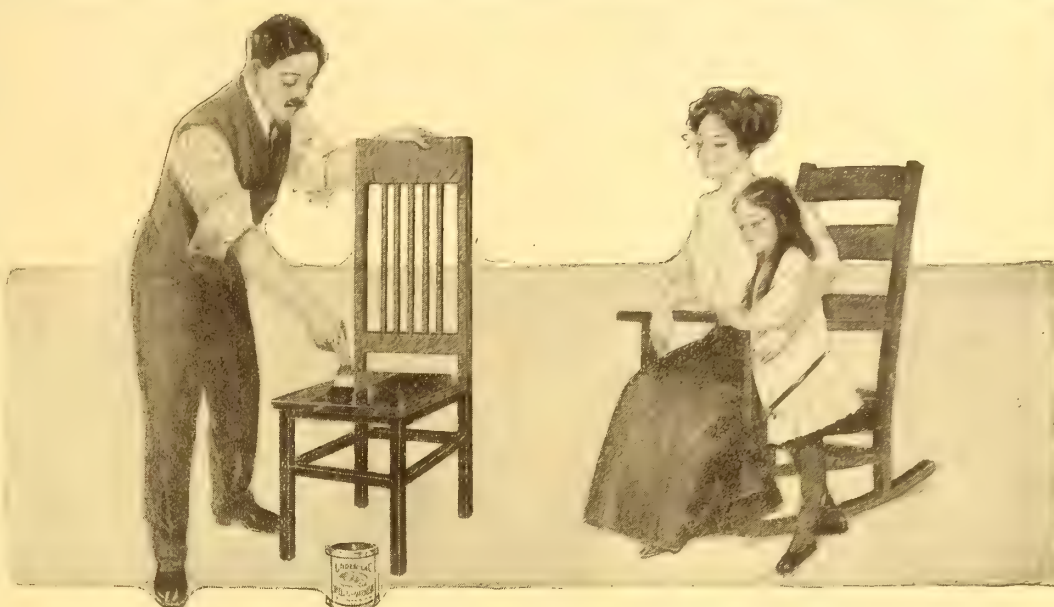
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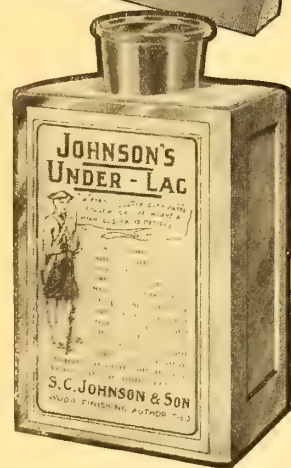
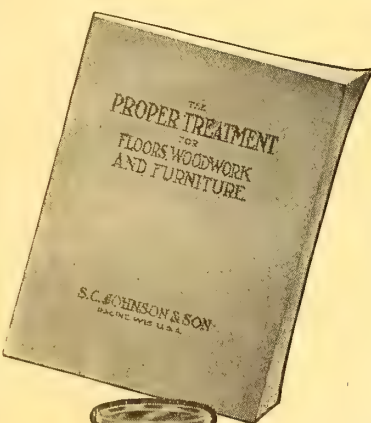
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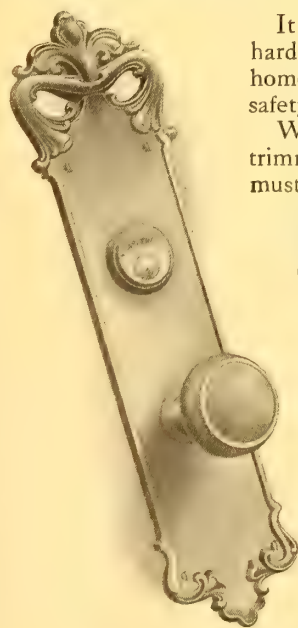
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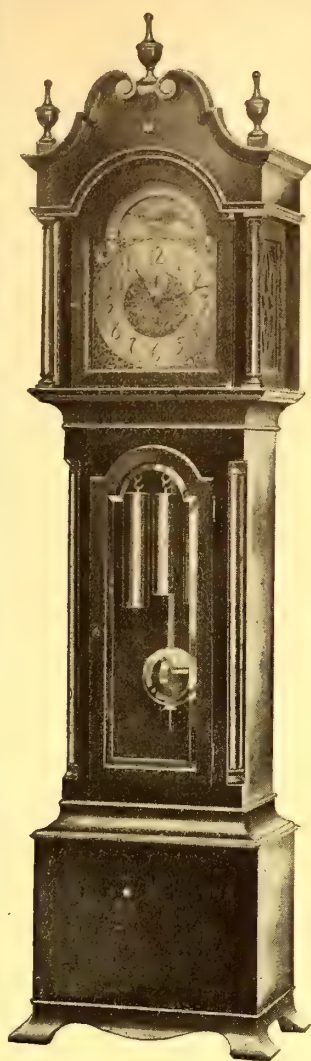
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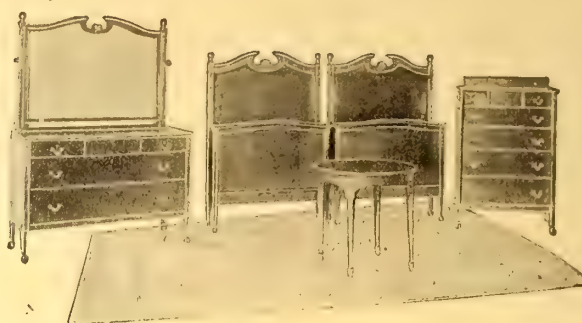
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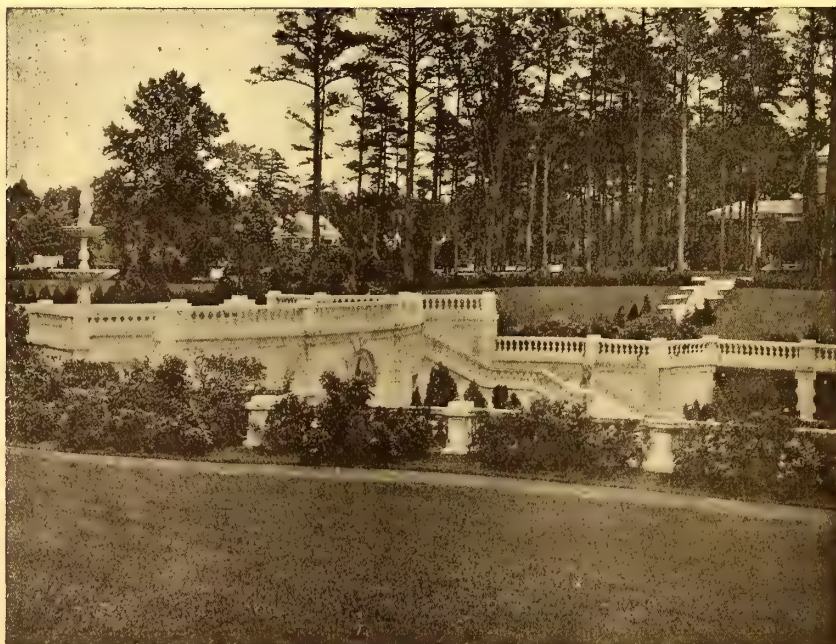
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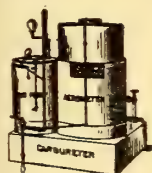
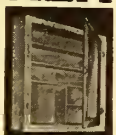
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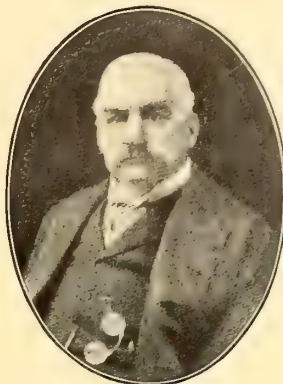
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BIRDS OF PASSAGE

By B. S. BOWDISH.

ONLY in birds (unless we except fishes) is true migration instinct found. Erratic, semi-migratory movements of insects take place; scarcity of food or some other strongly compelling cause induces, from time to time, a semblance of migration among some of the mammals, but only the winged and feathered inhabitants of the globe exhibit a seasonal rhythmic swing from south to north and *vice versa*.

Our modern knowledge embraces much data respecting the actual migratory movement, its date of commencement, duration, and termination; the termini of the journey, the route followed, and the manner in which the traveling is performed. We have accumulated a great mass of statistics concerning the time in spring and fall when certain feathered wanderers may be reasonably expected to appear at a given point along their route. We know that the method of performing these journeys varies much between species, as in length of flight that takes them from winter to summer homes and return, whether they fly almost continuously or by short, leisurely stages; whether flights are mostly by day or night or both; the route followed, and whether this is changed by varying weather or other conditions. We also know that certain species may almost certainly be found in summer homes along one route, and return to their southern winter homes by a widely different course. It is well established that some species flock and fly almost entirely by themselves, that others are found widely scattered among flocks of other species, that in still other cases two or three species may almost certainly be found flocked together, while in some instances the flight is performed more in an individual and straggling manner. It is a fact well known to many gunners that the course and manner of certain species of migrating birds has been changed materially within recent years, perhaps permanently, and that temporary changes of this character constantly occur, due to easily recognized causes. That class of birds whose life cycle is, perhaps, best known is naturally the one which includes those classed as game birds. Notably, as regards migration, these birds fall readily into three divisions: the water fowl, including ducks, geese, and swans; the Limicolæ or shore birds, principally the sandpipers and plovers; the gallinaceous birds such as the bob-white or quail and the ruffed grouse or partridge.

The southward fall migration of the first-mentioned division may, perhaps, be readily ascribed to search for wide and rich feeding areas, where open water is assured; the northern flight to a similar seeking of ample breeding grounds. While the southward flight is in some few instances continued as far as the West Indies and South America, in the main the movement is only sufficient and in general seems to conform to the cause assigned. In suitable localities on the New England coast and along Long Island we find an abundant representation of this division braving the rigors of winter, while in the wonderful breeding grounds along the coast of North Carolina, their numbers seem only to be limited by the persecution of the gunners. The northward journey of the members of this division, it is true, is for the most part, extended well into the Arctic or sub-Arctic regions, but this is largely a matter of necessity, to secure sufficient areas of suitable nature where they may breed in peace. Where birds of this division are not harassed in late winter and spring by shooting, it has

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been found that they often remain in considerable numbers to breed, much further south than the usually ascribed southern limit of summer residence.

On the other hand, the migratory movement of the second division mentioned is one of the most extreme known. Such birds as the golden plover, black-bellied plover, buff-breasted sandpiper, and others of their kind are startling examples of the most wonderful migration flights. The golden plover, breeding within the Arctic Circle, often extends its quarters as far south as Patagonia. Of necessity the breeding season is short, but nearly six months is spent in winter homes. About four months of the year is spent in their spring and fall journeys, which are sometimes as much as 3,000 miles in length. In spring they travel northward via the Mississippi Valley, but in fall they go south by the way of Labrador and Nova Scotia, from the latter point launching out to sea, and in favorable weather often making a trip of 2,400 miles to South America without a known stop. There seems good reason to believe that this avoiding of our coast has increased in frequency since the shooting of the birds by the barrelful so reduced their numbers, and endangered a coastwise journey overmuch.

The black-bellied plover breeds equally far north and, on this hemisphere, winters in the West Indies, Brazil, and Colombia. The buff-breasted sandpiper summers as far north as the Arctic coast and winters south of Uruguay and Peru. Migratory movement in all such birds has been undoubtedly affected by changed coastal conditions and excessive shooting.

The third division represents birds that are practically unaffected by migratory instinct. The bob-white and ruffed grouse are permanent residents where found, till adverse circumstances force them to leave, or extermination removes them from a locality.

The most fundamental factor in migration, the cause, remains practically unknown so far as birds in general are concerned. The formerly attributed cause, and the one which still figures largely in the popular mind, and seeking of a comparatively equitable climate by birds in their journeyings north and south, has long been abandoned by the ornithologist. The question of food supply only offers partial solution. This is true of other tentative causes advanced. It seems probable that a number of causes in a great variety of combination contribute.

In the study of migration, one fact seems to be unmistakably established, namely, the existence of an instinct that enables birds in flocks or individually, to perform migratory flights of great length, and to return with great precision to the breeding spot of the previous year. Thus we find birds that breed gregariously, as gulls, terns, herons, and others, yearly returning to the same island, strip of beach, marsh or swamp in a colony, and about the same time each year. In the same way our common birds that are more or less solitary in their nesting habits return in many instances to the same spot, year after year. The bridge girder, the beam in the cow-shed, or the molding on the porch pillar that has this year held a phoebe's nest, will, ten to one, hold such a nest next year. It is not exceptional to note on the limb of a village shade tree the occupied nest of the Baltimore oriole, the weathered last year's nest, and the battered remains of the nest of two years ago. A last year's nest of the vireo is often a good clue to the immediate whereabouts of an occupied nest. Robins' nests are not infrequently built on

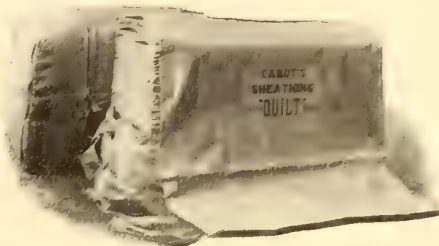
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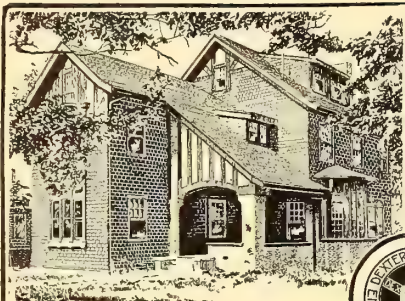
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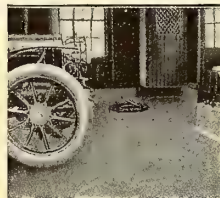
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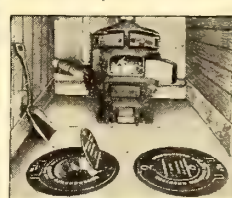
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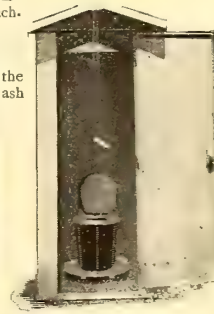
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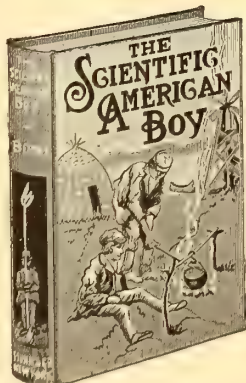
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the remains of the domicile of the year before. A hawk's nest is often used for many years in succession, and this is particularly the case with the fish hawk or osprey, whose nests, thus added to year by year, often become very bulky, with the underpart or foundation a crumbling mass of age-decayed matter. Woodpeckers, who seldom use the same nest twice, often have two or more excavations in the same stub, the nesting cavities of successive years.

All this evidence of a return of individual birds to a given locality is, of course, not absolutely conclusive. It is seldom possible to adduce such conclusive evidence. The reasonable conclusion, however, must be that the weight of evidence is in favor of the theory of the return of the same individuals. Some wonderful European records of the return of a species to a given nesting site are given by the late Prof. Alfred Newton. A common falcon, *Falco peregrinus*, a cosmopolitan bird commonly known as the duck hawk, in this country, had its eyrie at one point in Finland for 110 years; that is to say, there was at this same point an occupied nest of this species from 1736 to 1855. At Oxbridge, in one or the other of two earthen bottles placed for their use, a pair of blue titmice had their nest every year, with two exceptions, from 1779 or 1785 to 1873, or a total of 88 to 94 years. While it might be possible that by coincidence the individuality of this continuous tenantry would continually vary, yet it is hardly possible that it was other than a case of a family castle handed down to posterity.

A fact which is incidentally brought out by these observations on the return of birds to a given locality, is the apparently passionate fondness for a given nesting site, regardless of changing conditions in connection with it. In illustration of this the author just quoted cites the case of a stone-curlew, *Oedinemus crepitans*, a bird frequenting open places almost exclusively. For many years a pair of these birds had a nest at a certain spot near Elweden, Suffolk, England, and during this period the environment underwent a complete change, from a barren rabbit warren to a flourishing plantation, in the centre of which the nest continued to be occupied. An even more remarkable example of fondness for a certain spot, regardless of change of conditions, was brought to the attention of the present writer several years ago. A portion of Long Island City, within the greater city of New York, was being built up on filled-in marsh. During the fall and winter a plot of ground was filled-in and a house built thereon. The following spring a Florida gallinule, *Gallinula galeata*, was repeatedly observed wandering disconsolately back and forth across the dooryard, seeking the site of last year's nest, though all about were patches of virgin marsh.

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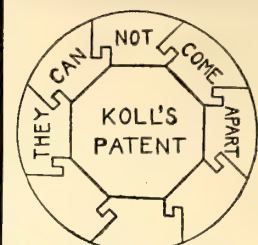
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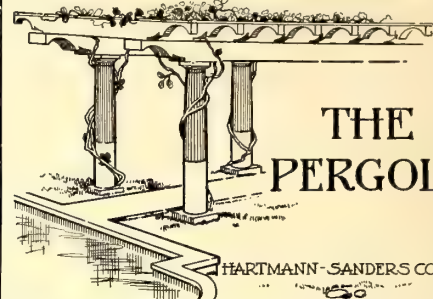
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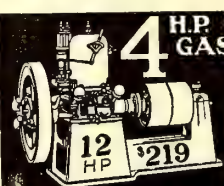
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OUR IGNORANCE OF WIND PRESSURE

IN view of the great size of modern engineering and architectural structures, and the vast areas which they expose to the wind, it is strange that our knowledge of wind pressure, both as to its amount for given velocities and its action on surfaces of different form, should be comparatively limited and uncertain. The subject of wind pressure is of the first importance; for in some framed structures, such as bridges, roofs, etc., cases have occurred in which the calculations have shown that the wind stresses have been greater than those arising from the weight of the structure itself or of the load which it carries. As an instance of the magnitude of the pressures to which exposed surfaces are liable, we refer to a large sign, 60 by 90 feet in area, erected above a hotel in this city, which in a gale of wind is liable to experience a maximum pressure of no less than $94\frac{1}{2}$ tons.

Our present knowledge regarding wind pressure on exposed surfaces is largely based on certain observations by the late Sir Benjamin Baker, taken prior to and during the erection of the Forth Bridge, Scotland. Mr. Baker provided a large surface, which was so supported that not only was the total pressure on the whole surface automatically recorded, but, by means of pressure gages, any local excesses of pressure on smaller areas of the board were separately recorded. The data thus gathered established the hitherto unsuspected fact that a strong wind does not blow with even intensity, but is composed of masses of air moving with varying velocity and exerting varying pressures. It was established, or rather assumed, on this basis, that a small structure such as a 100-foot county bridge was liable to be exposed over its whole surface to a much higher unit pressure than a 1,710-foot span like those composing the Forth Bridge. The British Government regulations required that bridge to be built for an average pressure of 56 pounds per square foot, but Sir Benjamin's experiments proved, or rather suggested, that while this might be advisable for a short bridge, it was too high for a bridge of great length. Hence, bridge engineers are now using for long-span bridges a uniform pressure of 30 to 35 pounds per square foot. In the interests of safe engineering, however, it is desirable that the data secured by Baker be amplified, and their truth further established, by more elaborate investigations carried on at different locations, and for longer periods of time.

Another branch of this subject which calls for additional investigation is the question of the pressure of the wind on inclined and on curved and irregular surfaces. We all know that the wind pressure is less on a cylindrical column than it is on a square column of equal projected area. One experimentalist found that the difference was in the ratio of two

to three; but the data upon this subject also are based upon a too limited range of observation. Here is a field of research of the very highest importance, which should be attractive to our technical colleges, and to those scientific institutions which have the means and the time to devote to an investigation of this character.

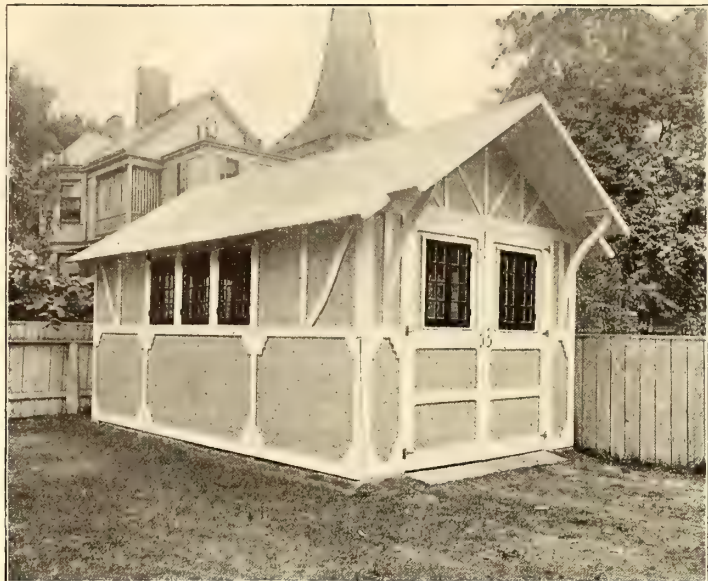
TO LIMIT OUR FOREST FIRES

THE resistless sweep across some of the richest forests of the Western States of this season's conflagrations, with their frightful toll of human life and destruction of valuable timber, is appalling and altogether discouraging. In casting about for remedial or preventive measures, by which the progress of these fires can be arrested and confined within limited areas, the most feasible method would seem to be that of the provision of fire avenues, of the same general character as those which are doing such good service in the forest-covered sections of Europe.

For many reasons it is impossible to establish and maintain a system of forest protection as elaborate and efficient as those abroad. The principal difficulties in the way of this are the vast areas to be covered, and the relatively high cost of labor. The European forester makes his calling his life business, knowing that if he give faithful service, there is before him a life job. He is clothed with considerable authority; in many cases he possesses the power of arrest; and his position is strengthened by the certainty that punishment for breach of the laws, and particularly those against fire, is swift and sure. The pay, however, is so small that it is possible to maintain in Europe a force which would be altogether out of the question in the United States.

Under existing conditions, it would seem that the most effective way to safeguard our forests would be to cut through them a network of fire avenues, following the European practice of making the width of the clearing twice the height of the tallest timber through which it is cut. In Europe the avenues in some forests will be found at intervals of half a mile; here they would be opened at intervals of from two to five miles, according to the configuration and value of the forest lands. The cost of the work, if it were judiciously laid out and properly executed, might be covered largely, and in some localities altogether, by the sale of the timber. The avenues could be so located with regard to the streams and rivers or the slope of the country, that the timber might be shot to the streams and floated out, or hauled out by sleds when the ground was snow covered. If the cleared avenues were seeded, it would be possible to rent the grazing privileges in consideration of the owners of the stock keeping down the undergrowth.

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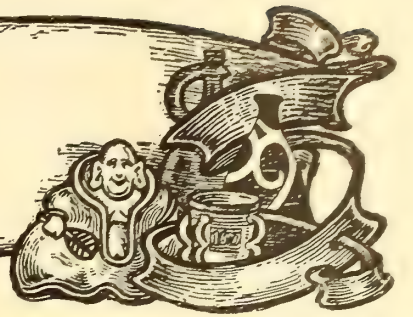
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American Homes and Gardens for November



Indian Ridge

The summer home of Dr. F. B. Harrington, at Ipswich, Mass., forms the opening subject for this number. The illustrations of the house show a many-gabled and rambling structure, as delightfully picturesque as it is delightfully placed, and is one of the most interesting homes to be found along the North Shore of Massachusetts. Barr Ferree has prepared an excellent paper on this delightful place which is profusely illustrated by many fine engravings.

Mazes

The October number contains an illustrated article on "Topiary Art," by A. Jennings Brown. For this issue Mr. Brown has taken up the study of Mazes, showing plans and designs of some of the oldest and most important mazes to be found in England and on the Continent. The article is treated in an interesting manner and contains much valuable information for one who is not familiar with the subject.

A Colonial House

One of the handsomest Colonial houses recently completed is the one built for W. L. Bailey, Esq., at Haverford, Pa. The house is a particularly handsome one, is consistent in its design, and has been carried out with a careful study of Colonial detail, both in the exterior elevations, as well as in the interior treatment. Robert Prescott has prepared an excellent paper on this house, which is illustrated by many fine engravings.

The City of the Sun

It has remained for Peter Roveda to develop a plan for a City of the Sun. It is a paper that is submitted on the new social project of economical housing for the benefit of the masses, following modern systems adapted to a square of ground of from one hundred to one hundred and fifty yards payable also in amortization from twelve to fifteen years. The system which Mr. Roveda has selected for the study of his problem is most interesting and is one that is worthy of a broad consideration.

The Mirror

Is there anything more fascinating than the seventeenth and eighteenth century mirror? Esther Singleton, an authority on the subject, has prepared a very excellent paper with many illustrations, showing some of the finest mirrors to be found in the old Colonial home of to-day. The article is full of valuable information for the art collector as well as for the layman who may be interested in the subject of possessing an old-time mirror.

Glass Espalier Walls

In the cultivation of fruits on the espalier system, the trees and vines are planted along the walls of the glass to which all their branches are carefully attached so as to spread them out into a plane surface, and allow free access of light and air to every part. Jacques Boyer tells in a very interesting manner how the growing of fruit in this way may be done.

Handicraftsman

This department, conducted by A. Russell Bond, is devoted to an article on "Home Made Pottery." The study of pottery is a subject of interest to all art lovers, to the layman as well as to the molders of clay. An interesting paper on the making of pottery in the home forms the subject for consideration in this department, and is one from which much information may be obtained for the amateur who desires to take up this kind of work.

Houses of Distinction

There are several pages of this number devoted to the illustrations of some houses of distinction. Paul Thurston has prepared a competent description of these homes, pointing out some of the important features. Photographic views of the exterior and interior and copies of the floor plans give a thoroughly complete presentation of these interesting houses.

The Steam Radiator in France

France is adopting some of the American household innovations, among which is the steam radiator that has become quite a problem to the Frenchman as well as to the artistic American. It has remained, however, for the Frenchman to solve the problem. Frances B. Sheaffer has prepared an article on the subject, which is illustrated by designs for the practical screening of the radiator by which it is made a thing of beauty instead of the ugly fixture that it now is in most of the American homes.

Garden Notes

The practical and proper manner in which a tennis court should be laid out is well explained in an article prepared by Charles Downing Lay. Mr. Lay not only tells how to lay out a tennis court, but he also shows by illustrations how it can be accomplished. Much information is given on the subject which should be helpful to those interested in this splendid pastime.

Decorations and Furnishings for the Home

Alice M. Kellogg's eighth paper, which appeared in the October issue, was devoted to the "Furnishing of a Boy's Room." The ninth paper by the same author, which will appear in this issue, will take up the treatment and the "Furnishing of a Girl's Room." Helpful suggestions will be given in the text and many fine illustrations will show how the work may be carried on in order to secure satisfactory results.

Conservatory and Greenhouse Heating

The designing and construction of greenhouses and conservatories follow very similar lines in all parts of the country, and the essential points of difference are found chiefly in slight modifications to suit local conditions. And while this is true, the heating of a conservatory or greenhouse is one of vital importance. Mr. George E. Walsh has prepared an excellent paper on the subject, which will be of aid to those who contemplate the heating of a conservatory or a greenhouse.



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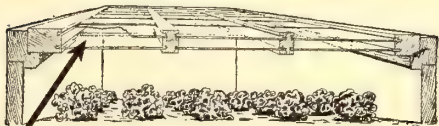
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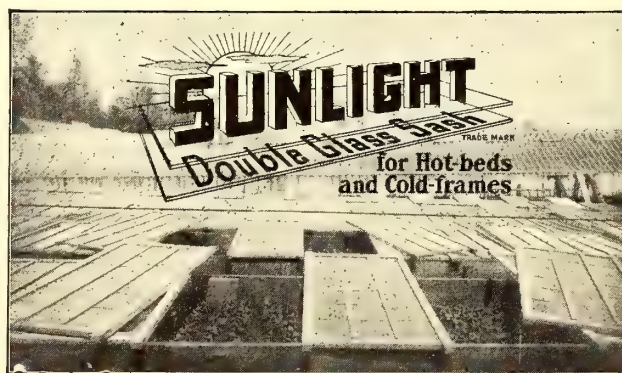
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CONTENTS FOR OCTOBER, 1910

POOL AND STEPS TO THE ROSE TERRACE. GARDEN OF W. S. SPAULDING, ESQ., AT PRIDES CROSSING, MASS.	<i>Frontispiece</i>
THE HOUSE AND GARDEN OF W. S. SPAULDING, ESQ., AT PRIDES CROSSING, MASS.	
	<i>By Barr Ferree</i> 375
A POMPEIAN VILLA WITH A CALIFORNIA BACKGROUND.....	<i>By Horatio F. Stoll</i> 382
TOPIARY ART	<i>By A. Jennings Brown</i> 387
"THE RICE FIELD"—The Residence of Mrs. Charles E. Perkins, at Westwood, Mass.	
	<i>By Paul Thurston</i> 390
A NEW SENSE ORGAN OF BUTTERFLIES.....	394
THE HANDICRAFTSMAN—Sun Dials Made at Home.....	<i>By A. J. Squires</i> 395
DECORATIONS AND FURNISHINGS FOR THE HOME—VIII. Furnishing a Boy's Room,	
	<i>By Alice M. Kellogg</i> 398
THE ARTISTIC TREATMENT OF FIREPROOF HOUSES.....	<i>By Edith Haviland</i> 401
GARDEN NOTES—Planting in the Formal Garden.....	<i>By Charles Downing Lay</i> 406
SUBURBAN WINDBREAKERS	<i>By E. P. Powell</i> 408
BULBS TO PLANT IN AUTUMN.....	<i>By S. Leonard Bastin</i> 409
The Editor's Notebook	American Homes and Gardens for November
	Correspondence
	New Books
	Birds of Passage

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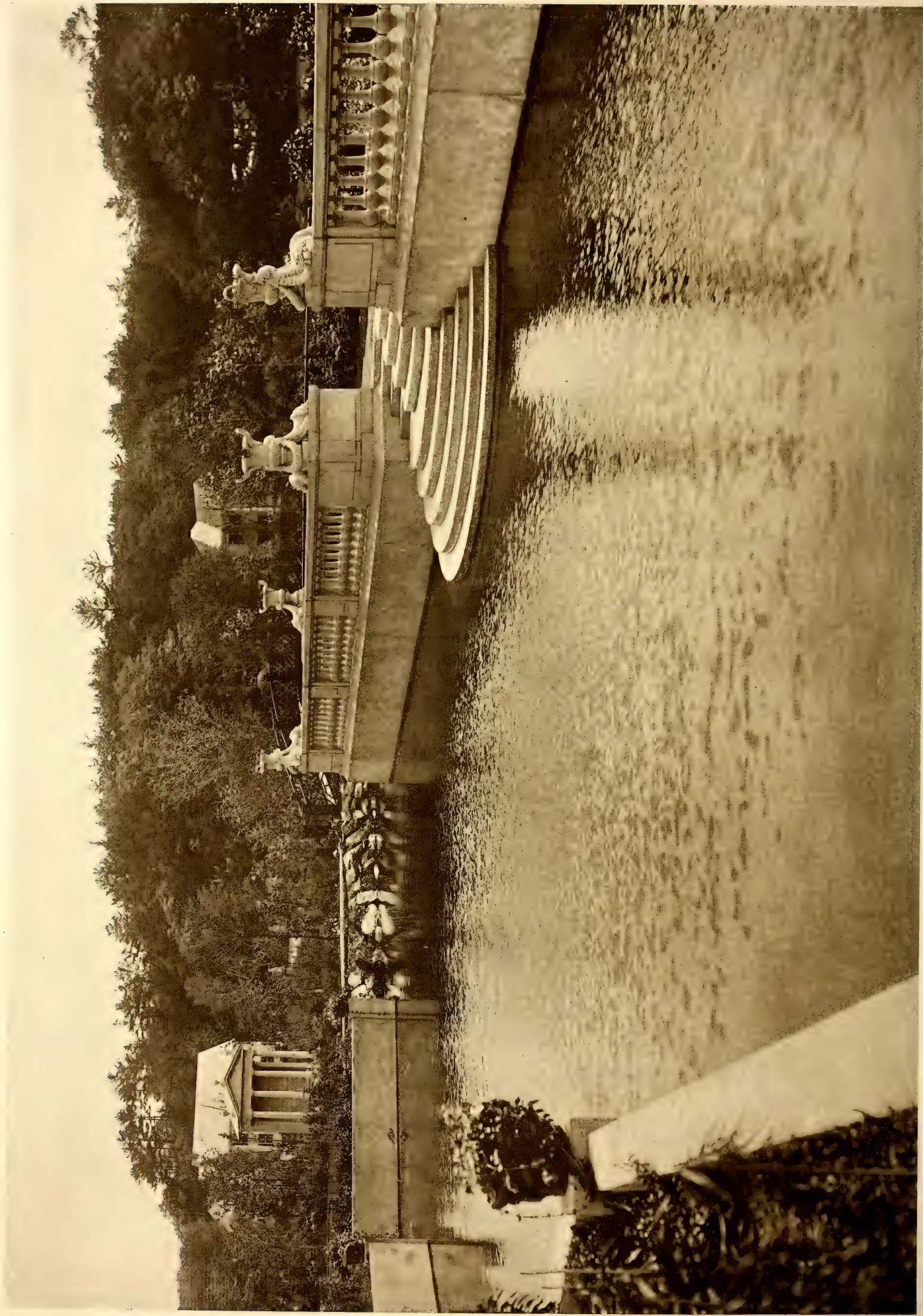
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Pool and steps to the rose terrace. Garden of W. S. Spaulding, Esq., at Prides Crossing, Mass.

AMERICAN HOMES AND GARDENS



Volume VII

October, 1910

Number 10

The House and Garden of W. S. Spaulding, Esq.

Prides Crossing, Massachusetts

By Barr Ferree



THE entrance drive to Mr. W. S. Spaulding's house at Prides Crossing leads directly to a forecourt, by which the main door is reached. The space is surrounded with a low stone wall, surmounted, next the house, by a light though high iron railing. The entrance gates are of wrought iron, connected, by means of an ornamental panel, with lofty stone piers, which are surmounted with large glazed lanterns of vase form. The house is built of seam-

faced Weymouth granite and has a shingled roof colored gray. The exterior trim of wood is painted to correspond with the color of the granite.

In plan the house is rectangular, with wings on each end, front and back. Those of the entrance front project more than do those on the sea front. Those of the entrance come quite well forward, and partially enclose the entrance forecourt. The salient features here are the small towers in the corners, between the main building and the wings, and the lofty gable of the center at the base of



The terrace overlooking the sea

which is a semi-octagonal projection containing the entrance doorway. This is a thoroughly dignified composition, consisting of two Roman Doric columns supporting an entablature and pediment. The only other ornamental feature here is the balustrade surmounting the extension to which the entrance portico is affixed.

It is obvious that this is a house whose attractiveness depends largely on its architectural construction, on the balance and relationship of its parts, and, in a very proper and sufficient way, on the dignity of its material. All of these are quite proper elements in the making of a successful design, and Messrs. Little & Browne,



One of the gardens

of Boston, who were the architects, have achieved a very remarkable success in this dwelling.

The task of creating a notable country home in a quiet and dignified manner is by no means so easy as may be supposed. A splendor in architectural enrichment is too often imagined as essential to handsome building, and the delight one may take in splendid rooms often finds expression in ornamental exteriors of quite unnecessary embellishment. It will presently be

seen that this house contains some notable rooms of quite unusual grandeur; but there is scarce a hint of this without, and certainly none at all in this quiet and sober entrance



The entrance gate and the court in front of the house



The rose garden and the pergola



The water front of the house and the terrace

front, in which the single doorway and the windows are designed in the simplest possible way and without other thought than their necessary and desirable relationship to the spaces within. As an example of house design of a somewhat unusual type, this one, therefore, merits attentive study.

The general plan is simple and direct. Admission is obtained by means of an entrance hall; on the left is a ladies' dressing-room; on the right is the staircase hall. These passages lead to the gallery, which connects the dining-room and the drawing-room. It opens into a loggia, which is the conspicuous feature of the sea front. The right wing of the entrance front contains the billiard-room and the den; the left wing is devoted to the service. The guest and family rooms occupy the second and the third floor.

The gallery is a magnificent room of very unusual qualities. It is a lofty and spacious apartment, richly decorated in every part, the walls having a low dado, above which they are paneled to the ceiling; those on the ends rising in tiers of three. The ceiling is elaborately decorated with three great square panels, and two pairs of lesser ones, which are broken by intervening circles. The fireplace is in the center of the inner wall, and is framed in with mottled polished marble. There is no mantel shelf, but the upper space is treated as a large panel with foliated moldings and a festooned decoration below the cornice. The latter is enriched with foliage and other conventional designs in harmony with the general decorative scheme of the room.

At each end is a monumental doorway, with a lofty frame and a broken curved pediment, the center of which is filled with a very decorative cartouche with foliage. The splendid doors are of mahogany, and the frames are handsomely molded. One of these doors, as has already been made clear, leads to the dining-, the other to the drawing-room. The floor is laid in a geometrical design, and partly covered with magnificent Oriental rugs. The room is handsomely furnished in a very ample manner, and fills, in the economy of the house, the functions of a living-hall, or general assembly-room.

On the sea front it is lighted by three great round arched windows, vast openings of quite superb proportions, which open into the loggia. The appointments and elaborate enrichment that characterized the gallery are here repeated in a very different way and in a completely different style.

The loggia is a Pompeian hall, with a vaulted ceiling, both walls and ceiling being decorated in oil colors with Pompeian designs. These decorations have been carried out in a very spirited manner, and with a keen appreciation of the possibilities of the style from which they have been borrowed. The room is paved with slabs of marble and with brick, laid in geometrical patterns, yet in a quiet and an unobtrusive way that gives interest without concentrating attention upon it. Wicker furniture is, for the most part, employed here, and the room abounds with chairs and couches of the most comfortable description.

Mr. Spaulding's loggia, in its surpassing comforts and unusual decorations would be notable anywhere; but it actually happens that neither of these things constitutes its greatest merit. This consists in its location and its magnificent outlook, which is directly over the waters of the North Shore and the sea. The very slightest acquaintance with this coast is sufficient to satisfy one as to the advantages of this situation. Indeed, the problem all along here is not so much the obtaining of a view, since of that there is an abundance and to spare—but to devise and obtain the best possible way of enjoying the lovely outlooks nature has been so lavish of.

The basic conditions of the problem are of the simplest and most elementary description. Given a sea coast on which trees and grass, flowers and shrubs grow almost literally to the water's edge; given a bank that rises somewhat above the water with all this wealth of nature's growing; the problem then becomes one of mere utilization

in the best and most delightful manner possible. For of course people live on the North Shore for the delights that accrue from doing so, and if there be any rivalry between the owners of the many fine places that now throng this region, be assured it is chiefly a rivalry of delight, a good hearted effort to see who can possess himself of the best possible way of enjoying to the utmost all this glory of nature's giving.

It doubtless would be unfair to proclaim Mr. Spaulding's method of obtaining this enjoyment as the most successful of the many ways and means that may be noted here; but certainly in itself it is most successful and most delightful. There must be, I think, a special joy in enjoying delightful conditions under delightful circumstances, and surely there can be no more exquisite way of realizing the pleasures of the views from the North Shore than are afforded by



The loggia



The main gallery possesses unusual qualities



Broad sweeping steps ascend to the second terrace

Mr. Spaulding's loggia and its supporting structures.

For the loggia is but the climax to a series of terraces, the apex of which is the house. The architectural treatment of the dwelling here is so broad and fine that it seems larger than on the entrance front, where the parts are more varied, and the total dimensions less conspicuously in evidence. The main building has a quite subordinate position, and appears actually only in the third story, where it rises in a gable end of somewhat unusual design. Below it, and embraced by it on the margins, are the two sea wings, two stories in height, rectangular in form, and surmounted with a somewhat high balustrade, over which appear the dormers in the third story of the main portion.

Below, in the center, is the loggia, which from without is seen to be contained in a separate structure applied to the center of the group forming the front. Like the wings it is surmounted with a balustrade, and like the other parts of the house it is without any but the severest of architectural treatment. In the center are three vast round arched openings. The glazed doorways are really rectangular in form, the lunettes being filled with glazed fan-lights. The double awnings are not without a genuine value in the color of the exterior, and the roof forms a spacious balcony that is entered from the second story.

Below are the terraces by which the natural fall of the ground is admirably utilized and the great natural beauty of the situation is enhanced. The two purposes are thus accomplished in a thoroughly successful manner. The loggia opens directly onto an open platform that is actually the roof of a lower structure. This is built of stone and is enclosed on either end by a curved stone stairway that descends to the lower terrace. Both stairs and balcony are



The terraced wall and the rose garden

enclosed within a handsome wrought iron railing, the space without the loggia having stone piers carrying ornamental vases, filled with plants.

The terrace is paved with cement, arranged in large squares, with smaller squares in the corners. It is enclosed within a low stone wall at either end, and on the sea front with a light iron railing. The stone piers reappear in the center, where a wide flight of steps lead to a lower level. There is a beautiful grassed area here, semi-circular in form, and bounded without by a plain iron railing.

And then, lowest of all, is the formal garden, a quaint and a charming space, with paths paved with cobblestones, and flower beds of odd designs; a brilliantly blooming flower garden, which while very much in place in the general architectural scheme here, nevertheless seems a singular bit of flowering to find in such close proximity to the sea.

Very beautiful all this space is. The climax to the whole is the house that rises in quiet dignity at the summit of the picture. The glass doors of the loggia are ajar, and fascinating glimpses of a fascinating interior may be gained from many a point without. If one does not care to lounge within, one can do so with equal facility and delight without. The terraces are varied and interesting in their design and arrangement, and the floral beautifications are more than ample, and immensely satisfying. And beyond and below is the sea, with its ever changing surface, its wonderful lighting, its varying moods. Truly one would be hard to please who could not enjoy to the full the many ways of enjoyment that man and nature have alike provided here.



Extensive vistas of the sea are obtained from the second terrace



The side of the terrace to the rose garden

A Pompeian Villa With a California Background

By Horatio F. Stoll



The foothills and the vine clad floor of the Russian River valley as seen from the villa porch



ONE of the show places of California is the Italian-Swiss Agricultural Colony at Asti, in Sonoma County. Thirty years ago, when the Colony was founded, the spot where the Sonoma Asti beautifies the landscape was only a sheep ranch. The uninviting foothills were covered with poorly nourished grass and thick underbrush. Learned viticultural experts, nevertheless, after inspecting all sections of the State, informed the little coterie of progressive Italians, who were anxious to provide employment for deserving immigrants out of work, that the soil there was practically a counterpart of the mother district across the seas and admirably suited for the growing of grapes; and the charming landscape one now beholds, of vine and villa, picturesque colonists' quarters, and rose-covered wineries, is an impressive object lesson of what can be accomplished by brains and pluck.

So the land was bought and from it, first, had to be grubbed the growth of madrone and oak and the underbrush that prevented cultivation. All the laborers were men whose homes had been amidst the vine-clad slopes of the Mediterranean

and of Southern Europe, who had seen the grapes purple under the sun's kisses in those climes and had quaffed with delight the vintages abroad. They sought the exposures on the hillsides of the new Asti that were the same as they had known at home, and planted the choicest imported vines. The clusters came in perfection and before long a red tide, every drop bearing vigor and health, gushed from the juicy crushings.

The directors of the young Colony were delighted. They now felt confident that in this beautiful Russian Valley, with its rolling hills, proper soil and abundant rains, they would be able to produce as pure and as delicious wines as those from which the old Asti of Piedmont had won its fame.

And in time, they did make fine wines. But their struggle for recognition was not the sailing of a dory on a summer sea. There were disasters that might have balked men with less courage or faith in their ultimate success. Three times the Colony was in dire distress because of the low price of grapes, and three times grit, intelligence and perseverance tided them over the discouraging periods.

During all this time, the shareholders received absolutely nothing from their investment.



A vista through the marble columned entrance

But there was no clamor. They knew that in the cellars, which had been constructed with the profits, wines lay aging that would some day make a name for the institution. At the end of sixteen years, their fondest hopes were realized—their triumph was complete. To-day the Colony is capitalized for over a million dollars and for fourteen years now, the stock has been making up liberally for every deferred dividend.

From the very inception of the Colony, Andrea Sbarboro, banker, agriculturist, author and philanthropist—California's foremost Italian-American citizen—has been one of its most energetic officers and advisers. He has played an important role in the settling and upbuilding of

When the directors of the Colony began ornamenting the wooded canons, the riverside and convenient knolls with rustic bungalows, Swiss chalets, and rambling Mission structures, Mr. Sbarboro decided to beautify his oak-dotted grounds along the Russian River with a unique country home where he could entertain the numerous friends of the family. He talked the matter over with much-traveled visitors, with whom he had long conferences, at which countless suggestions were considered and then cast aside. Finally he consulted with noted architects. But none of them could suggest what he wanted—something suited to the Asti summer climate and surroundings; something distinctive and characteristic of the Italians who had estab-



The pillared entrance to the villa Pompeii

the State and his career, like that of the Colony which he helped found, has been associated with epoch-making events and interesting experiences. He came to San Francisco in the pioneer days, a penniless youth; to-day, he is reputed to be a millionaire and is looked upon as one of the financial leaders of the Pacific Coast.

The Italian-Swiss Colony at Asti has been one of Mr. Sbarboro's pet enterprises. He has contributed much of his time, energy and wealth to its growth and development and nearly every week-end of the year, summer and winter alike, finds him rustivating at Asti. It is only a three hours' trip from San Francisco and at his picturesque country place, known as the "Villa Pompeii," he enjoys an ideal out-door life.

lished the Colony; something of a permanent nature that would remain long after the owner had passed from his adopted country.

In the midst of his dilemma, Mr. Sbarboro left for an extended trip abroad, hoping that Italy itself might aid him in solving his problem. And where do you suppose his search for appropriate plans ended? In the uncovered ruins of Pompeii!—when he was being shown about the Domus Vettiorum, the partly restored house of the Vetti, which gives the visitor an excellent idea of the residences of the Roman patricians who lived in the days before the ancient city was buried in the lava maelstrom. In excavating during 1894 and the following year, care was taken to retain in its place every object found and to reproduce

the original beauty of a Pompeian house with all its paintings, sculptures and richness of ornamentation.

What particularly attracted Mr. Sbarboro was the peristyle garden. The roof of the ancient colonnade has been restored and flowers and shrubs have been planted in the enclosure in accordance with the arrangement indicated by the appearance of the ground at the time of the excavation. The experiment has proved a great success, for the fountains, statuettes, and wealth of greenery are a welcome sight to the weary tourist after wandering through miles of streets and ruined buildings that were blotted out under the fiery wrath of the furnace mountain behind it.

The romantic trend of his nature prompted Mr. Sbarboro to reproduce the Vetti House at Asti. The peristyle

an impluvium, a hearth consecrated to the lares, or a tablinum. She agreed they were all right in Pompeian days, but at Asti, she contended, every room should be simple, useful and should face on the court. Besides Mrs. Sbarboro insisted on comfortable bedrooms for her family and guests instead of the cubbyholes with which the ancients were content; she wanted a kitchen where her servants could move about with ease in the preparation of the meals; she said she needed plenty of closets, several bathrooms and modern fireplaces to keep the rooms properly heated, since it was announced that the structural material would be reinforced concrete.

A compromise was effected by which it was decided to reproduce as faithfully as possible only the peristyle and



The fountain and the pool in the garden

garden was just what he had been looking for. It afforded an opportunity for plenty of sunshine and flowers and was a welcome change from the Spanish patios, Persian gardens and Moorish courts that have been so extensively introduced in pretentious summer homes in California.

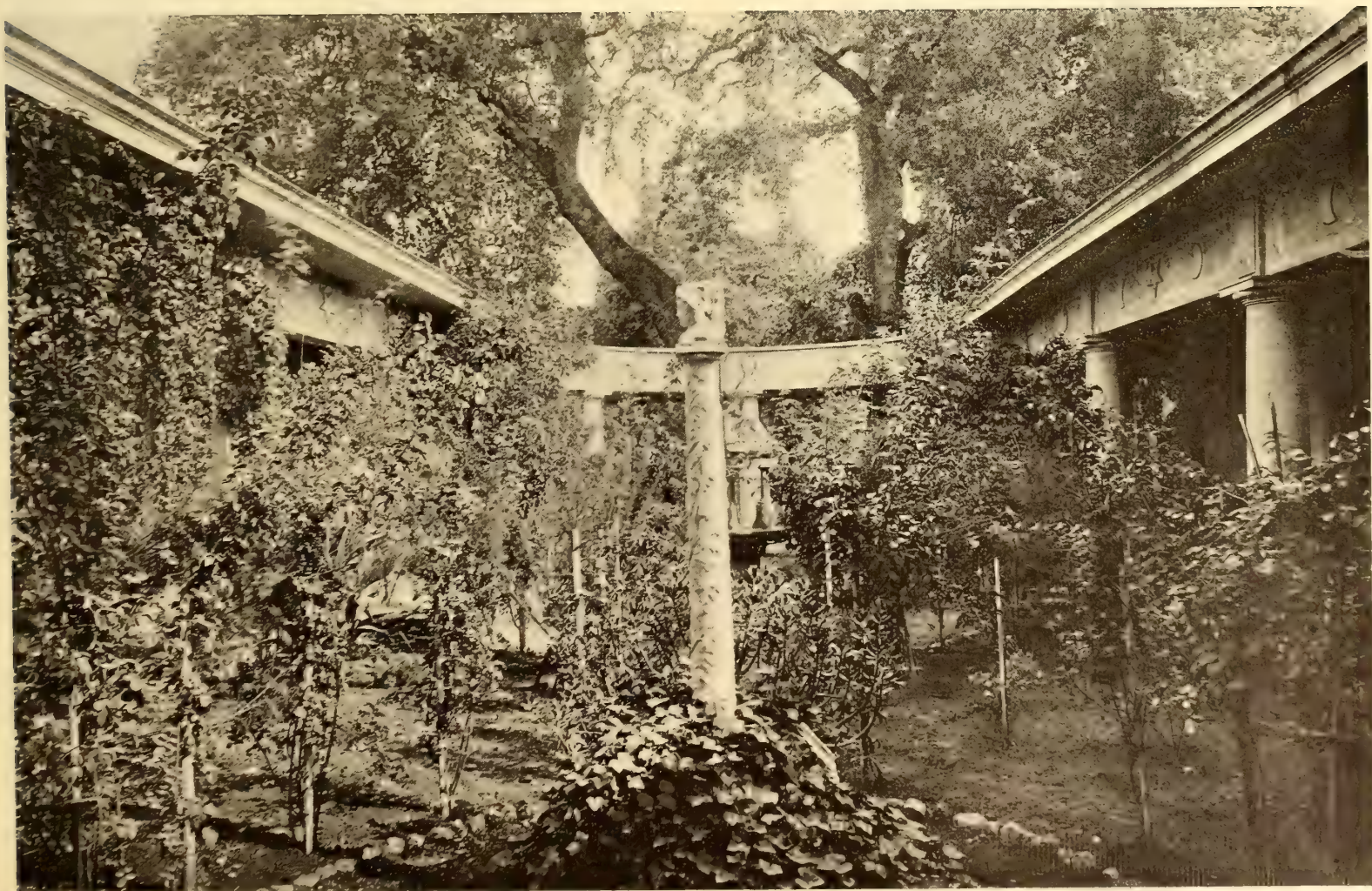
Armed with an elaborate set of plans which he obtained from the authorities, Mr. Sbarboro returned to California and spreading them before the curious eyes of his family, he proceeded to describe the different rooms of the famous Vetti House. But before he had gone far, Mr. Sbarboro realized that many changes would have to be introduced before the house could be made a practical summer habitation. From the beginning, he found his wife protesting vigorously against a "museum" being erected instead of a summer home. She could see no necessity for an atrium,

center garden. All the rooms, however, which were to be large and airy, were to be so grouped about the court that they would present the appearance of a suburban Pompeian villa. How successful the architect and gardener have been in securing this atmosphere can be attested by the thousands of travelers from every clime who have marveled at its beauties and inscribed their name in the visitors' book.

The pillared entrance to the Villa Pompeii grounds is just opposite the station of Asti, where a number of the residents of the neighborhood and the Colony's employees usually assemble at train time. Nearly all the vineyardists and wine-makers brought their families with them from the Old World and to-day the dark-haired, olive-skinned women and children form a picturesque bit of Old Italy



The outlook from every point of vantage is entrancing



The peristyle and the garden

in these California foothills. It is no wonder that the Duke of the Abruzzi and Prince Ferdinand of Savoy were strongly reminded of their sunny Italy, and felt at home here after traveling so long in foreign countries.

At the end of a long avenue of blossoming accacias, flanked with endless rows of vines, the visitor gets his first view of the slate-roofed villa, nestling in the midst of a tall bamboo border, clumps of spineless cacti, feathery palms and orange and olive trees, for Asti, it must be remembered, lies in the very heart of the northern citrus belt of California. There are several fountains playing as you pass the well-kept lawns and the air is sweet with the perfume of roses, heliotrope, and jasmine.

Almost before you realize it, you have passed through the gleaming white columns of the vestibule entrance to

caught through the embroidery of flowering shrubs and ampelopsis that drape the colonnade.

In the center of the garden, a small fountain rises above the blossoms and beyond, as a fitting background for the open peristyle, are two venerable oak trees, their thick trunks covered with green moss and their lofty crests festooned with wild grapevines that have been allowed to clamor up their sides and follow their own sweet will, dropping fantastic streamers that sway with every passing breeze.

The ancient Romans spent a great part of their time out of doors and in such a peristyle as this, an open-air life must have been very pleasant indeed. One side of the odorous garden is always in the shade and during the hot days the little fountain gives freshness to the surround-



The garden front of the villa

the villa. You are in a wide hallway that separates reception- and dining-rooms and there, before you, is the peristyle garden with all the rooms of the house facing on it. The sheer beauty of the scene makes you halt and gasp with surprise and delight. The vision is an enchanting one.

Immediately in the foreground is a slender column of white Carrara marble, with a tracery of ivy leaves in bas relief upon it, capped by a double-headed likeness of Bacchus and Ariadne, a duplicate of the original in the Vetti House garden and commonly used in ancient days for boundary stones. At either corner of the court, on pedestals, are nude figures of children each holding in one hand a bunch of grapes and in the other a goose. Glimpses of cinnabar red walls, decorated with broad black bands, are

ing air, while at night it lulls one to peaceful slumber with its pleasant babble of falling water.

In the dreamy court at night, the silvery moonlight makes it easy for the imagination to conjure up the past in every detail that has been reproduced at Asti. The marble statuettes, the fountains, the vases of flowers, the columns, white and tranquil, close every vista; and towering above all are the aged oaks and the same glittering stars that were seen on the plains of Herculaneum before the withering blasts of Vesuvius made scoræ of that fair landscape.

While Mr. Sbarboro made the court the principal feature of his summer home, he has provided other attractions and beauty spots. There is an open-air breakfast-room, under a canopy of orange trees and an orchard containing a variety of fruit trees.



A corner of the garden at Levens Hall showing fine examples of Topiary art

Topiary Art

By A. Jennings Brown



DURING the last few years there has been a remarkable revival of what had at one time promised to become a lost horticultural art; this is the old-time "topiary art," which consisted in the training and the clipping of trees into fantastical shape.

The process of training is both laborious and tedious, and the preservation of the shape, once it has been successfully obtained, requires no little dexterity in the handling of tools and skillful judgment in their use.

The advocates of the "natural" school of gardeners have condemned in no unmeasured terms, the process of distorting the trees. On the other hand, these quaint designs in a garden surrounding a medieval or an eighteenth century residence are most appropriate. The craft is an old one, since in the days of Queen Elizabeth the custom of clipping new hedges into formal shapes was very prevalent. When William and Mary succeeded to the English throne they introduced many of the old world peculiarities of Holland. Hedges were cut and trimmed in a wide variety of quaint designs which ranged from animals down to more commonplace things. Trees were specially planted for the express object of being trained and clipped into some uncommon shape. The result is that in various parts of Great Britain one may see isolated instances where gnarled and weather-beaten box and yew trees have been transformed into such patterns as peacocks and geometrical designs. Some of the most notable collections of trees are at Easton Hall, Elvaston Castle, and, particularly, at Levens Hall, Westmoreland, which we illustrate. These are the most important exhibitions of topiary work, not

only in England, but in the world. The development of a garden containing these strange dwarfing and transformation of nature's handiwork is by no means an expensive hobby; but the process of evolution is a very slow one. Some of these trees are two and three hundred years old, so that those who plant and rough hew box and yew trees can hardly expect to see perfect results of their handiwork during their lifetime. Before taking in hand, the trees are allowed to reach a growth of five or six feet. Great attention is paid to the formation of the branches in order that the design may be assured and that the foliage may become sufficiently bushy. Careful watching and constant clipping must be given to transplanted trees which have already been started in their curious growth. Considerable skill is required in this process in order that too much of the foliage may not be cut away, thus damaging the original design. As the topiary art has been allowed to practically die out, it is difficult to secure the services of skilled clippers. After a tree has been given its formation, the design can be revised successfully by a competent gardener. In such gardens as are illustrated herewith the topiary worker is a necessity, for on him depends the preservation of the smooth outer surface. This almost endless treatment is absolutely essential, as once a hedge or a tree is permitted to become ragged, it is extremely difficult to restore it to its symmetrical shape. The type of tree best suited to the art of the topiary worker varies according to the results which it is desired to obtain. For birds, animals, cups and saucers, vases and objects of intricate designs, box and yew are the two varieties best adapted to the craft. For simple geometrical shapes, such as cones

and pyramids, holly and white thorn are often used. The best results are obtained with single trees, as the treatment can be carried out more advantageously and with better success, whole hedges not being so susceptible to this work. Inasmuch, however, as the yew is of unusually slow growth, a period of fifty or sixty years must elapse before the shape of the tree can be considered perfect.

A garden which is laid out for topiary treatment, as in the illustrations which we show, presents a rather weird and fascinating appearance. In the Levens Hall collection, birds and animals are intermingled with other formations, such as cups and saucers and geometrical designs. Unique shapes are used to serve as arbors, and the trees are so thick that they act as a protection in the most inclement weather, as well as does the ordinary type of summer house.

The village of Bedfont, near London, contains some celebrated examples of the topiary art. The quaintness of its appearance is increased by its little Norman church, with its wooden tower and dwarf steeple, and its pair of trim and formal yew trees, cut out into the shapes of peacocks, with the date 1704, and the initials of the churchwardens of that time, still legible in the cropped foliage. The local tradition is that they represent satirically two sisters who lived at Bedfont, and who were so very haughty that they both refused the hand of some local magnate, who thus immortalized them, being "as proud as peacocks." This, however, is a legend only. These are some of the grotesque shapes with which a stiff, formal and unnatural age loved to decorate its gardens, lawns and alleys; and they are only a "survival" of what once was a common fashion.

If the peacocks have rendered the two maiden ladies above mentioned immortal, they have in their turn been immortalized by Thomas Hood, who makes them the subject of one of the most serious of his early "serious" poems:

"Where erst two haughty maidens used to be,
In pride of plume, where plumy Death hath trod,
Trailing their gorgeous velvet wantonly,
Most unmeet pall, over the holy sod:
There, gentle stranger, thou may'st only see
Two sombre peacocks. Age, with sapient nod
Marking the spot, still taries to declare

How once they lived and wherefore they are there.

"Alas! that breathing vanity should go
Where pride is buried; like its very ghost
Unrisen from the naked bones below,
In novel flesh, clad in the silent boast
Of gaudy silk, that flutters to and fro,
Shedding its chilling superstition most
On young and ignorant natures—as is wont
To haunt the peaceful churchyard of Bedfont."

Pope, who must often have seen these quaint artificial ornaments, satirized them in No. 173 of the "Guardian": "How contrary to simplicity is the modern practice of gardening! We seem to make it our study to recede from nature not only in the various tonsure of greens into the most regular and formal shapes, but even into monstrous

attempts beyond the reach of the art itself; we run into sculpture, and are yet better pleased to have our trees in the most awkward figures of men and animals than in the most regular of their own. . . . A citizen is no sooner proprietor of a couple of yews, but he entertains thoughts of erecting them into giants, like those of Guildhall. I know an eminent cook who beautified his country country seat with the coronation-dinner in greens (evergreens), where you see the champion flourishing on horseback at one end of the table, and the queen in perpetual youth at the other." And he adds a list of some fifteen or sixteen subjects

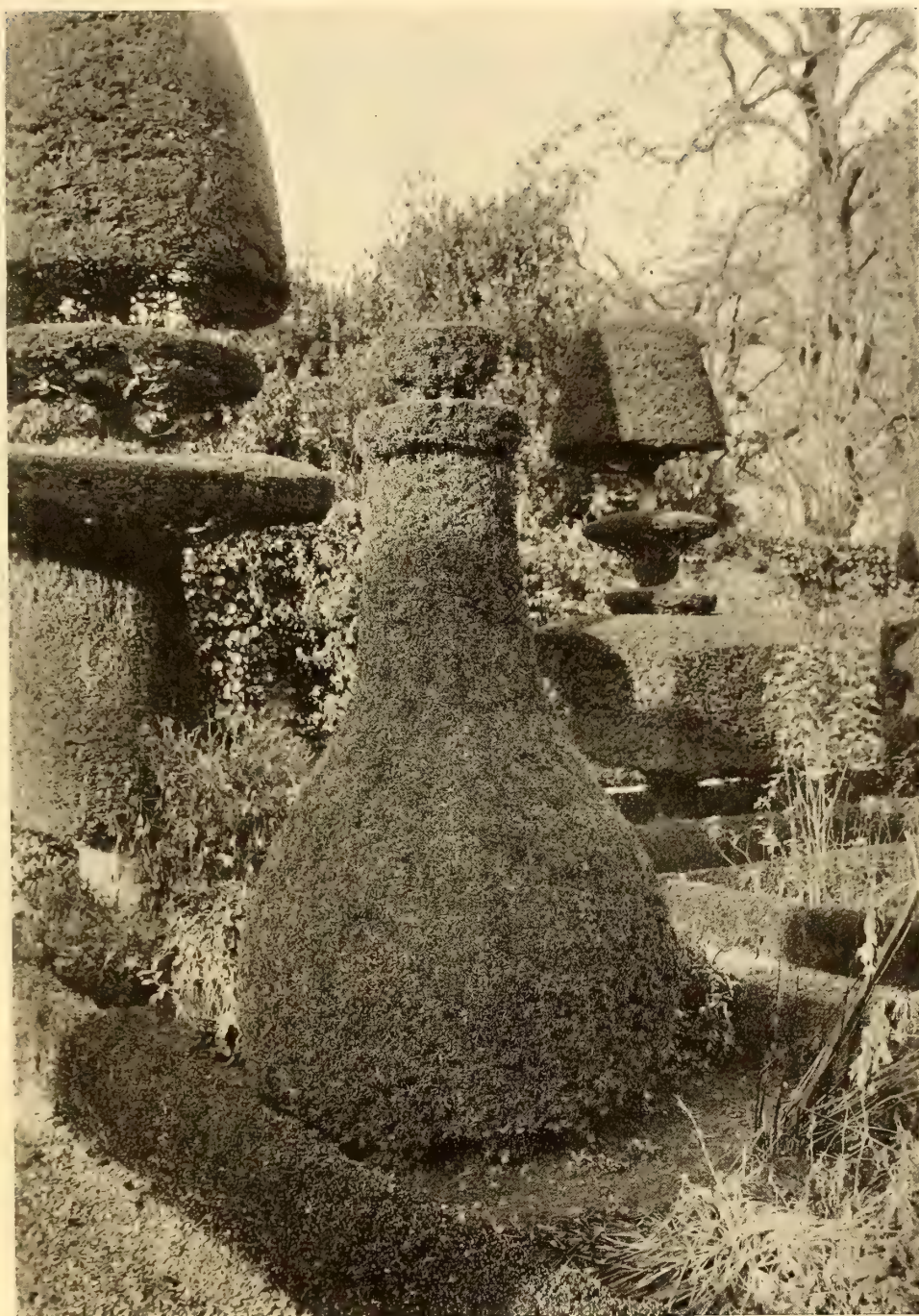


A simple design showing the result of continuous clipping and trimming

cut in evergreens, from Adam and Eve and Noah's Ark down to Queen Elizabeth, which are to be disposed of by an "eminent town gardener" of his acquaintance.

Most of the specimens in England remain as curiosities, but it can hardly be called a lost art in view of the fact that we even find modern examples in this country. In a number of Southern towns good examples may be found. California also has some specimens of very good work, but the acme of topiary art is reached in the garden of the Hunnewell Estate at Wellesley, Mass. Mr. Hunnewell's success has been the more notable, since in England the results have been achieved with yews, which do not thrive in the New England climate. He used, therefore, such trees as were suitable to the conditions, and employed pine, spruce, hemlock, junipers, arbor-vitae, cedars and Japanese retinosporas. When planted these trees were very small, and for

twenty years their growth was retarded twice annually in order to induce a compact and close habit. Many of them are now more than forty feet in height and sixty feet in circumference, the hemlocks especially having been highly successful. A terrace garden borders the lake. Below, it is contained within a marble retaining wall; above is a pavilion, with red roof tiles, supported by red sandstone. The terraces have been treated as Italian gardens. To the south of the house is a fine grove of pines, including an avenue bordering a walk. Beyond them is the rhododendron garden, with a trellised arbor, to which curtains may be attached to shelter delicate plants. To the left of the rhododendron garden is the holly path, between beautifully rounded hedges of arbor vitae. Beyond the hedges are the greenhouses, stables and flower garden. In the height of summer, the flower garden is filled with rich bloom, and here, in the autumn is a magnificent display of chrysanthemums. The Hunnewell estate has long since demonstrated many important facts in American horticulture. Mr. Hunnewell has shown that, in fifty years, it is possible,



A bottle made out of a tree



A corner of the garden at Levens Hall showing the quaintly clipped box and yew trees

with suitable care and attention, to produce a garden in this country which for beauty and elaborateness will favorably compare with many Old World gardens. He has shown, further, that American trees and shrubs, or trees that are hardy in this country, are as capable of formal treatment as the trees more ordinarily used for such purposes abroad. He has demonstrated that many trees of many varieties may be artistically grouped, and that an outdoor museum of plants may be as attractive and as beautiful as though their beauty and adaptability to beautiful effects were the chief objects sought.

The relative scarcity of topiary embellishment in this country seems an indication that the desire for the art is not exceedingly acute. Still the presentation of its culture and its forms as here

given, may induce those that we have interested, to conjure with means which certainly have yielded features that are often as beautiful as curious, and produce them results in spite of time and expenditure somewhat taxing; in spite, too, of the fact that to the student the current research in this field is limited.

"The Rice Field"

The Residence of Mrs. Charles E. Perkins, at Westwood, Mass.

By Paul Thurston.



The gateway and the entrance to the estate



ONE of the most interesting and practical houses to be found in the suburbs of Boston is the one recently built for Mrs. Charles E. Perkins, at Westwood, Mass., from plans prepared by James Purdon, architect, of Boston, Mass.

The house is of the typical New England farmhouse type, so frequently seen in the country districts of this section of the country, and a study of the ground plan will show the relation of the house to the stable, the garage, and the coachman's house, all of which are a part of a continuous building under one unbroken roof.

The exterior walls of the building are covered with white painted clapboards and trimmings, and green painted blinds. The roof is covered with shingles which are effectively stained and finished in a dull moss green.

The hall is a central one extending through the entire depth of the house. It has a low paneled wainscoting and a wooden cornice, the wall space between these being covered with a gray and white paper. Square white painted balusters and a mahogany rail form the balustrade to the staircase which ascends to the second story.

To the left of the hall is the morning room, or parlor, treated with an ivory white trim and a wall covering of Japanese grass cloth of a greenish yellow tone. This grass cloth is placed above the wainscot and is finished with a wood cornice. The open fireplace has green and white tiled facings and hearth, and a Colonial mantel. A plain green velvet rug covers the floor, and chintz curtains of green, white, and pink, are hung at the doors and the windows.

A soft blue tone is the color scheme which is used for the dining-room. The walls above the white painted wainscot are covered with a Japanese grass cloth of a blue tone, while the floor is provided with a two-tone blue velvet carpet. The open fireplace has blue and white tiled facings and hearth, and a Colonial mantel. Chintz curtains of a combination of blue, pink, and green, are hung over softer ones of lace at the windows. The furniture is of mahogany, and is of good style. A fine old family portrait is appropriately hung over the sideboard at one side of the room.

The most interesting picture in the room is the one hanging over the mantel, which represents the United States Sloop of War, "Jamestown," Cap-



A trellised gateway to the garden



Another view of the morning-room

tain R. B. Forbes, and on which is the following inscription:

"This print, commemoration of the splendid generosity of the American Government in dismantling a Ship of War for a Mission of Peace and Charity and of the Noble-hearted Citizens who humanely and benevolently responded to the call of Irish Distress is Respectfully Dedicated to the President, House of Representatives, Congress and People of the United States of America."

By their Obedient Servants,

GEORGE W. ATKINSON,
and

WILLIAM SCRAGGS.

This sloop "Jamestown" was petitioned for, on the birthday of Washington, and the loading of the old war craft was commenced by volunteer Irishmen on St. Patrick's day with provisions sent by the people of New England to their suffering brothers in Ireland.

It was commanded by Captain Forbes, assisted by Captains Farwell and Maccondray, volunteers on this mission of peace and charity. The "Jamestown" arrived in Cove Harbor on April 12th, 1847. Captain Forbes was the father of Mrs. Perkins, the owner of "The Rice Field."

The butler's pantry, kitchen, servant's hall, laundry and drying-room are trimmed with yellow pine

finished in hard oil, and each apartment is fitted up complete with all the best appointments. The den is treated with ivory white paint and is furnished in an artistic manner.

The sun-room is treated in green and white, with green rugs on the floor, green painted walls and a white painted trim. This room is furnished in a practical and artistic style and is, indeed, a very livable room, and one that is used more than any other part of the house.

The second floor is divided into sleeping rooms. The owner's suite, consists of two bedrooms, boudoir, and bathroom. The boudoir is treated in lavender and gold, and it has a lavender covering on the floor. One of the bedrooms has gray walls and white trim, another is finished in a yellow tone, and a third in pink. Chintz curtains in

harmonizing colors are hung at the windows of each of the rooms.

The bathrooms have tiled wainscotings and floors, and are furnished with porcelain fixtures and exposed plumbing.

The servants' rooms and bath are built over the kitchen extension.

A covered way from the kitchen extension leads to the coachman's house, the last consisting of two rooms on the first floor and two rooms and a bathroom on the second.



The sun-room is enclosed with glass



A trellised arbor forms a porch to the front door



The house



Stable, garage



The morning-room



The hall and



the outbuildings



coachman's house



Stone steps are placed in front of the entrance



the staircase



The dining-room



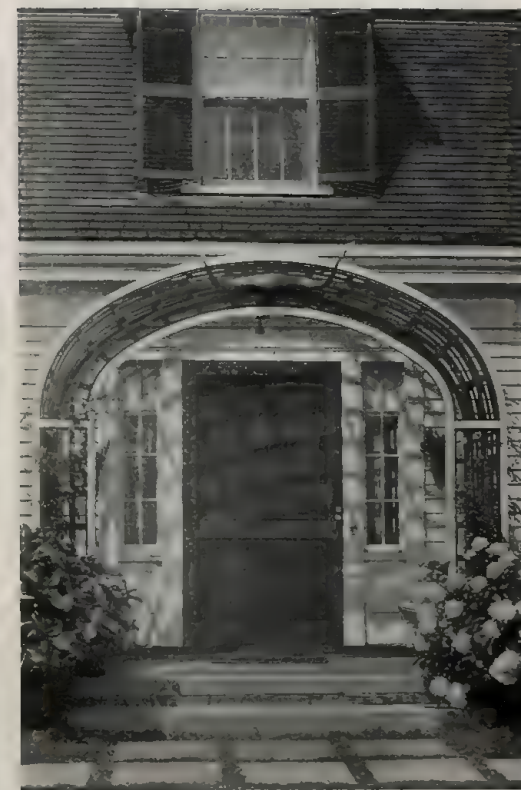
A trellised arbor forms a porch to the front door



The house and the outbuildings



Stable, garage and coachman's house



Stone steps are placed in front of the entrance



The morning-room



The hall and the staircase



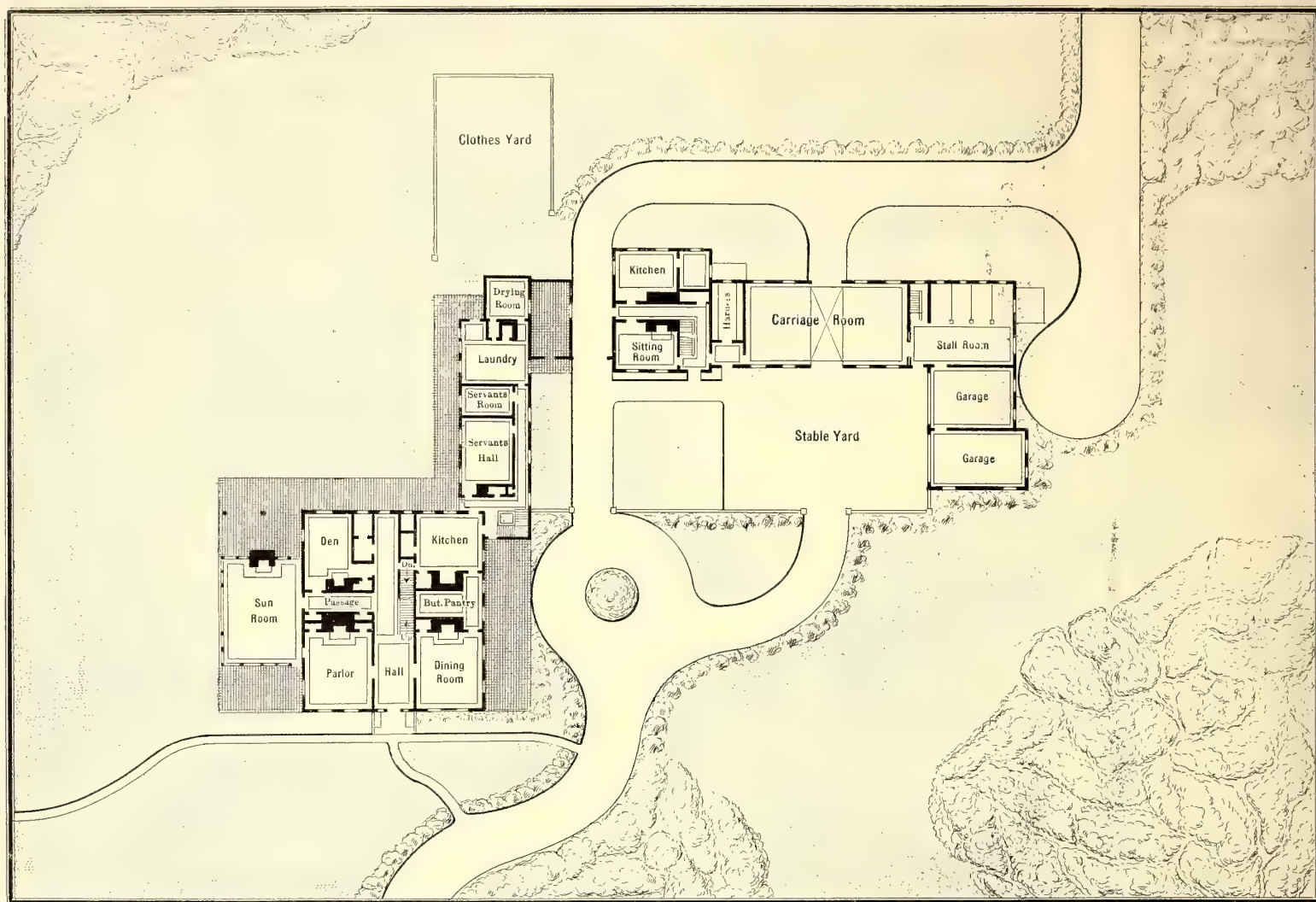
The dining-room

The carriage room, the stable, and the garage are arranged in a convenient manner and are thoroughly equipped with all the best modern appliances.

One of the most important features in the development of an estate is the proper planning and arrangement of the house and outbuildings upon a site.

an attractive feature of the whole general scheme.

In the planning of the house it was found desirable to place all the living rooms so that they might have an exposure, with an abundance of sunshine, in some part of the house during the entire day, beginning with the dining-room in the early morning and ending in the house to the



The ground plan, showing the relation of the house to the stable, the garage and the coachman's house

A study of the plan presented on this page will show how completely this point has been studied, and also the position of the house and its relation to the other buildings on the property, together with the arrangement of the necessary roadways of approach, and the garden which form

service part of the house late in the afternoon.

This is an ideal way to lay-out an interior arrangement of rooms, and the architect has taken advantage of the possibilities of the site, from which a successful result has been attained.

A New Sense Organ of Butterflies



VERY butterfly collector has had the unpleasant experience that some butterflies, and particularly those of the species of *Catocala* (mourning cloak) will notice his approach from a distance and fly away in time. This observation led Tetens to think that these animals must have an auditory organ which warns them of approaching danger by receiving sounds; and accordingly he expressed the supposition that two pit-like depressions at the first posterior segment of the body might be organs of hearing.

It is rather surprising that with a group so frequently collected as the Noctuidæ, an organ could escape observation which is found quite generally in this group, without difficulty with the naked eye as a striking formation on each side of the first abdominal segment. This location probably explains why this organ should have been seen by many persons without arousing the suspicion that it could be a sense organ; for naturally enough such organs are looked for

chiefly at the head, particularly at the feelers, although other parts of the body may be the seat of specific sense organs.

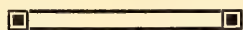
When examining the animal we see on each side at the line separating the chest from the abdomen and near the points where the rear wings are attached, a deep channel which toward the surface is surrounded by several humps.

The external morphology of this organ varies in details with the different species of Noctuidæ; with some, the opening is scarcely visible from the outside, being concealed by long hairs set close together. The microscopic examination shows that only one of the ridges in the vicinity of the cavity of the organ, the one nearest the back, can be considered a "sensory ridge," but that this one has true sensory cells and sensory hairs and thus gives the organ the character of a sense organ. Tetens's supposition, mentioned above, that this is an auditory organ, may very well be maintained, since the structure of the organ answers all the requirements of an organ of hearing.



The Handicraftsman

Conducted by
A. Russell Bond



Sun Dials Made at Home

By A. J. Squires



ONE might imagine that a sun dial could be laid out without resorting to mathematics or mathematical formulæ by merely erecting a post at the center of the dial face and putting a mark at the end of the shadow cast by the post at each hour during the day, as indicated by a good timepiece. Unfortunately, the problem is not quite as simple as this.

Everyone knows that the sun rises higher in the sky in summer than in winter. Hence, it will not do to use the end of the shadow to mark the hours, for winter shadows are longer than those of summer, and the late afternoon shadows summer or winter are too long for any dial face. For this reason, the edge rather than the end of the shadow is used to point out the hour, and in order to have this shadow correct for any season of the year, it is necessary (in the Northern Hemisphere) that the post point north and lie parallel with the axis of the earth. The proper inclination for any locality may be found by consulting a good atlas and taking the latitude of the place as

the inclination of the post. For instance, the latitude of New York is about 40 degrees 45 minutes. The post or gnomon, as it is called, would then have to be inclined to the face of the dial at an angle of 40 degrees 45 minutes. The form of the gnomon may be varied to suit one's taste, so long as the shadow casting edge, that is, the upper edge in a horizontal dial, is maintained at an angle equal to the latitude of the place. An observer sighting along this edge at night would find his gaze directed exactly at the celestial pole of the heavens, or almost exactly at the North Star.

With the gnomon set at the right angle and pointing due north, our problem is not yet solved, because we have to bear in mind that there are three different kinds of time. The sun dial gives us only solar time, and 12 o'clock solar time occurs at the moment that the sun crosses the meridian, which is a plane passing due north and south through the position of the observer. Unfortunately, the sun is rather irregular in its apparent motion, arriving at the meridian earlier at some times of the year than at others. The



Vine-covered mound as a sun dial pedestal



Gothic pedestal for a sun dial



A sun dial on a plain wooden column

variation from day to day is but slight. However, it would confuse us, greatly, to have to set our watches so that they would run slower at certain times of the year than at others. Therefore, astronomers have theoretically constructed an ideal sun which keeps perfect time, and when this sun crosses our meridian, we call it 12 o'clock local mean solar time. In the middle of February, and at the end of October of each year, the real sun's time, which astronomers call apparent solar time, varies about fifteen minutes from mean solar time, but on four days of the year, the sun is on time and agrees with the theoretical or mean sun. These days are the 15th of April, the 15th of June, the 1st of September, and the 25th of December.

Before we can use our watch to lay out the sun dial, there is still one more complication that must be considered. New York lies on the seventy-fourth meridian west of Greenwich. When the mean sun crosses this meridian it is not 12 o'clock by our watches, but four minutes of 12, because standard time in eastern United States is taken from the seventy-fifth meridian, and it takes the sun four minutes to pass from the seventy-fourth to the seventy-fifth meridian. If a town were situated on the seventy-eighth meridian, for instance, the clocks of that town, if correct, would point to twelve minutes after 12, when the mean sun crossed the meridian of that town.

Bearing this fact in mind, one can lay out the dial face of a sun dial by means of a good watch on the four days of the year mentioned, when apparent solar time and mean solar time agree, by setting his watch fast or slow so that it will indicate local time rather than solar time. The Central States take their time from the ninetieth meridian, the Rocky Mountain States from the one hundred and fifth meridian, and the Pacific States from the one hundredth and twentieth meridian. On Christmas day, if a man in New York sets his watch four minutes slow, he can mark the shadow cast by the gnomon on his sun dial face at the end of each hour, as indicated by the watch, and thereafter the sun dial will give him correct apparent solar time.

If the day should prove cloudy, he would have to wait until the middle of April for the next favorable opportunity. Of course, by consulting a good almanac, he could set his watch to give apparent solar time on any day of the year.

Fortunately, there is a very simple way of laying out a sun dial without the aid of a timepiece, which does not involve any mathematics, and which requires only a slight knowledge of drawing; and after all this method will probably be found simpler than that of using the watch, particularly as it does not depend upon good weather and certainly is not an all day task.

The accompanying diagram, Figure 1, illustrates the method as applied to a square dial face. The gnomon is indicated as rising from the center of the dial face at O and extending to the upper edge at A, where the mark for XII o'clock should be placed. On all dials, two lines should be drawn for XII o'clock, spaced apart a distance equal to the thickness of the gnomon. If the dial is to be used in latitude 40 degrees north, the gnomon should, of course, point to the north and rise at an angle of 40 degrees from the face of the dial, as explained above. Taking the afternoon hours to start with, draw a line OB at an angle of 40 degrees to the right-hand side OA of the gnomon. From A as a center, draw an arc tangent to OB from C to E, where it meets an extension of the line OA. Extend the line AB, which is the northern edge of the dial face, and at right angles to OA, to H, and draw a line EG parallel to AH. Then with E as a center, draw the arc AFG. Divide this arc into six equal parts and through the points thus found, draw radial lines, extending them until they intersect the line AH. The points of intersection give us the positions of the hour marks of the dial, and lines from the center O should be drawn to these points of intersection and marked I, II, III, IIII and V. The line for VI o'clock will be parallel to the line AH. The hours of VII and VIII may be found by drawing lines below the



Sun dial pedestal in the form of an urn

6 o'clock line at angles corresponding to those of III and V o'clock. The afternoon hours being marked, it is a simple matter to lay out the morning hours at corresponding angles. As from the left-hand side of the gnomon it is the edge of the shadow which marks the time, and not the end of the shadow, the shape of the dial does not matter, provided the hour lines radiate from the center of the dial face at the correct angle.

Figure 2 shows a circular dial face with the point O placed considerably below the center of the circle. The hour angles, however, are the same as those in Figure 1, and hence a dial of this shape would be as correct as the first dial, if placed in the same locality. If it be desired to

Once this bounding line has been found, it is a simple matter to lay out the half and quarter hours, and even the minutes, by subdividing each space into halves, quarters, etc.

The amateur who wishes to make his own sun dial will perhaps gain some valuable hints from the accompanying photographs of garden sun dials. The simplest of these, but by no means the least attractive, consists of a circular plate at the top of a vine-covered mound, with a very plain gnomon mounted on it. By the use of concrete, a very elaborate pedestal for the sun dial may be made. Stove pipe is commonly used by amateurs as a mold for casting columns. If the amateur is careful to remove the mold,

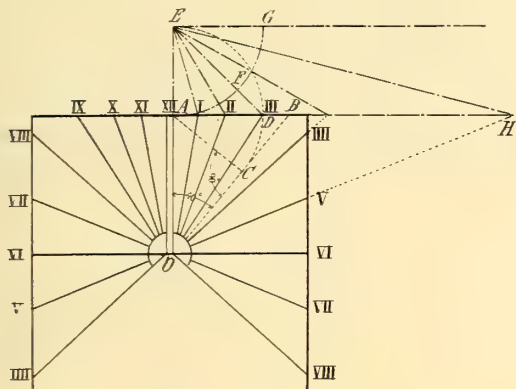


Fig. 1—Dial layout

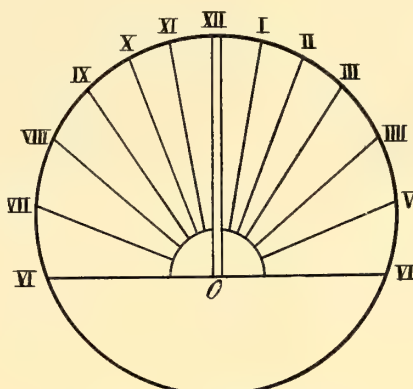


Fig. 2—Circular dial face

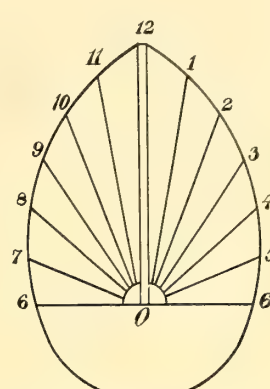


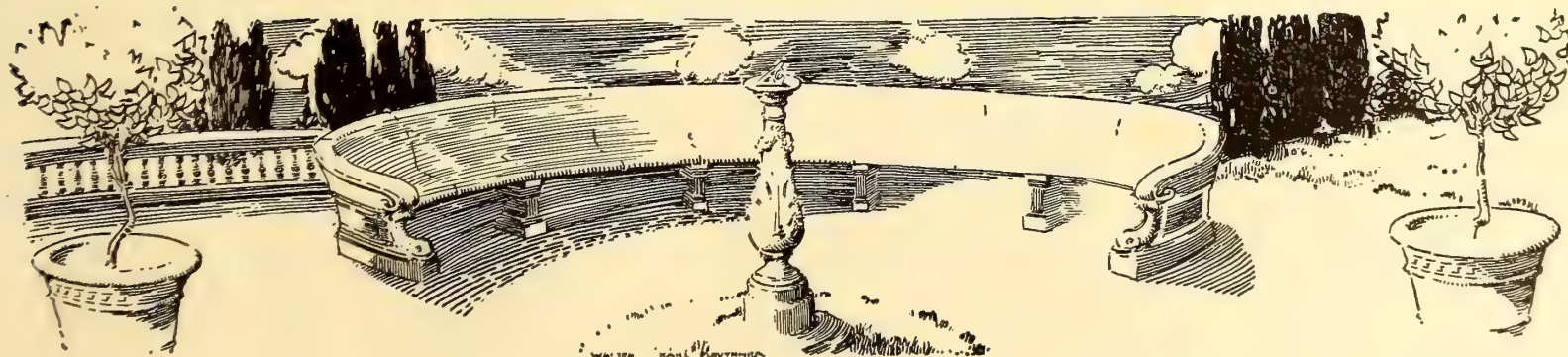
Fig. 3—Leaf-shaped dial face

mark the half hours, it will not do to place a line midway between XII and I, I and II, etc., but the half-hour marks must be found as were the hour marks by dividing the arc AFG into twelve equal parts and extending lines through the points thus found to their intersection with the line AH. In a similar way, quarter hours may be marked off by referring back to the arc AFG.

In order to avoid this complication, and at the same time to provide a unique design, the leaf-shaped dial face shown in Figure 3 may be used. The hour angles in this dial face are the same as those in Figures 1 and 2, but the bounding line of the dial face has been so chosen that the distance from 12 to 1, 1 to 2, etc., is the same for the entire dial.

at the time when the concrete is hard enough to retain its shape and yet comparatively soft, he may carve the surface of the concrete. Stencils may be used to advantage, if it is desired to repeat a design.

Perhaps the chief charm of the sun dial lies in the quaint motto carved on the dial face. There have been many publications on sun dials containing various mottoes and legends, from which the amateur may make his own selection. While the face of the dial, and the gnomon as well, may be made of concrete, a much better effect may be secured by making the face of sheet copper in which the hour numbers as well as the motto, may be etched with acid. The gnomon may also be of scroll form, cast at small expense, from a wooden pattern, prepared at home.





A book stand



Some suitable furniture



A comfortable divan

Decorations and Furnishings for the Home

By Alice M. Kellogg

VIII—Furnishing a Boy's Room

A GOOD many elements enter into the equipment of a boy's room if it is to be up to date in the practical and artistic details.

Naturally, the rooms which the family use in common are of the first importance, and the furnishings for the living-room receive the chief attention. The dining-room, too, is favored by a generous outlay for the furnishings, but upstairs there often appears a curious contrast when the boy's apartment is examined, for here one may discover a collection of misfit articles that have been transferred from other parts of the house. Or, there may be a lack of such comfortable arrangements as are suited to the occupant's needs.

With the general interest now evinced in raising the standard of the interior furnishings of the home, it is strange that any portion should be neglected; but one may count on a rapid change in this direction, for even the younger members of the present generation are directing their thoughts toward improvement in their particular domains and every season there may be found a better provision in the stores for meeting their ideals.

If a room can be fitted from the beginning for boy

ownership, the various details may be carefully planned to meet the individual requirements. In one home a large garret space was used to advantage for a sitting-room for the boys of the family. The architectural lines were treated in a way to add to the masculine expression of the place, and an open fireplace was introduced for its homelike qualities. Casement windows were set above a long bench, and the stationary seats were boxed in to add closet space.

The ceiling visible between the beams was colored an ivory tone to contribute as much light as possible, and the side walls were inexpensively paneled with a material to represent wood.

A writing desk, a center table for reading lamp and wooden chairs of the Windsor type were the only pieces of furniture, as the built-in settles made comfortable lounges. Grass mats were laid on the floor and attractive covers were made for the seat cushions and pillows. The success of this room might suggest similar efforts in other homes, modified, of course, to meet different conditions.

When a boy's room is to be specifically a sitting-room, its equipment may be of a more utilitarian character than almost any other part of the house, although the practical point need not exclude artistic excellence. For instance,



A corner for study



A boy's sitting-room

in the matter of rugs—which is at once the most necessary for comfort-giving and for setting the color scheme of the room—one may mistakenly adopt at this point vivid reds and greens with the intention of making a cheerful effect, when good taste would choose quieter colors to dignify the floor lines. For rugs of moderate cost, one may find some browns with green borders among the Japanese jute rugs, or quite various colorings in artistic tones in the Scotch wool rugs. Some of the Wilton or Brussels rugs would be suitable if their sizes fitted. For a floor of irregular spaces one may depend on carpet by the yard, shaping it the right size, and using it with or without a border. Small figures set closely together, with a ground-work of medium dark tones would be a good selection. If a number of rugs in small sizes are preferred, they should be laid in front of the larger pieces of furniture.

Furniture on mission lines is an accepted thing for the boy's sitting-room, but a mistake may be made in adopting those of the heaviest and most pronounced type. Some good examples are shown in the illustrations. Wooden or rush-seated chairs reproduced from Colonial times are in keeping with the practical usage of this place, but a divan of modern make is essential for comfort. For the latter one may, if the cost must

be kept down, choose a cot with the reinforced woven-wire top, the latest improvement in this piece of furniture, and lay on it a mattress of fine felt; or, for better service, a frame fitted with spiral springs and a mattress of South American hair.

A fitted cover of plain denim may be made for this couch, or a loose cover may be laid over it. In the fifty-inch materials there are heavy home-spuns admirably suited for the latter purpose, and for covering a set of square back pillows more decorative materials like Dutch prints or hand-blocked linens are useful. Too many colors and too great a variety of designs at this point should be avoided if the desire is to bring all the contents of the room into harmonious unity.

A hammock or a swinging settle is often more enjoyed in a boy's room than the stationary lounge, when the ceiling will sustain the weight. (Illustrations of swinging settles may be found among the ideas for porch furnishing in back numbers of this magazine.)

A writing desk or writing table is an essential part of the furnishings of a boy's sitting-room. On the special table to fit a corner space (shown in one of the illustrations), the sliding leaves at either side give additional room for either books or writing materials.



A transformed garret

The hanging shelves above the study table are simple pieces of construction designed to fit the jog in the wall. For the accommodation of heavy volumes of reference, the book stand in the small picture is adaptable.

Shelves built against the wall have a stability of appearance that appeals to the coming man. In a rented or temporary house, however, the book shelves may better be of the sectional variety that can be adjusted to different spaces. In the earlier make of these shelves, horizontal cases were considered the most practical, but the newer forms are upright, about thirty inches wide, and made to fit together like continuous shelving. The open shelves are often preferred by a boy, to those cased-in with glass doors, but the difference in cost will often decide this point. If curtains are put up across open shelves, it is better to use a plain than a figured material, and for easy adjustment it should be sewed to flat brass rings.

Window curtains for a boy's sitting-room may be of net, muslin or novelty goods, avoiding lace, silk and velvet effects. If an attractive color and texture are chosen it is not necessary to add any ornamentation in the way of trimming. The less the windows are cumbered, and the more perfect the mechanical contrivances, the more satisfactory will be the result.

If a door curtain is needed, the same rule is applicable. Among the materials for portieres the mercerized effects, wool damasks and jute afford an opaque surface, and thick-meshed nets if only a partial screen is desired.

If a portion of the room is to be screened, there are three and four-paneled screens covered with burlap. Or, the upper part of the screen may be a panel of wood, or fitted with a picture. An amateur design and workmanship may, perhaps, be utilized for this piece of furniture, expressing some original idea.

A reading light is an article that must have real practicability, whether it be an oil lamp or the more up-to-date electric fixture. The lamp itself may be of metal or pottery, and the shade of the celadon variety—a pale green

exterior with a white lining. The decoration of the walls may be a plain color, either in a tint or a paper, or one of the texture effects in the latter. While there are innumerable varieties from which to choose, a pleasing tone for a background may be the ideal to attain. The choice of pictures may well be left to the boy himself, whose taste will develop more rapidly if allowed the freedom of expression.

The principles of simplicity and good taste that have been suggested for the sitting-room of a boy, hold good also in the details of the bedroom. Some plain designs in bed, bureau and night stand are shown in the illustration of a bungalow chamber. A novel economy of space is accomplished with bunks or berths. Metal beds of the newest type are made with square posts instead of the round, omitting the brass knob that formerly finished the corner pillars.

A bureau or a chiffonier with an adjustable mirror is next in importance to the bedstead in the list of furniture. A side chair, a night table and a washstand are

also to be considered, with rugs and wall-paper. If the bedroom is also to be the study and sitting-room, a combination of furnishings to meet all three needs must be planned for, according to the space at hand and the money that can be drawn upon. For consideration of ventilation

and general comfort, it would seem that one large apartment carefully arranged for all three uses would be preferred to subdivisions of small dimensions.

In fact, where the two plans have been experimented with, the former has been found of much greater advantage. Wall spaces can be treated on a broader scale; furniture may be better placed; windows may be a more positive factor in decoration, and every detail that enters into the development of a boy's sur-

roundings may be given more ample consideration.

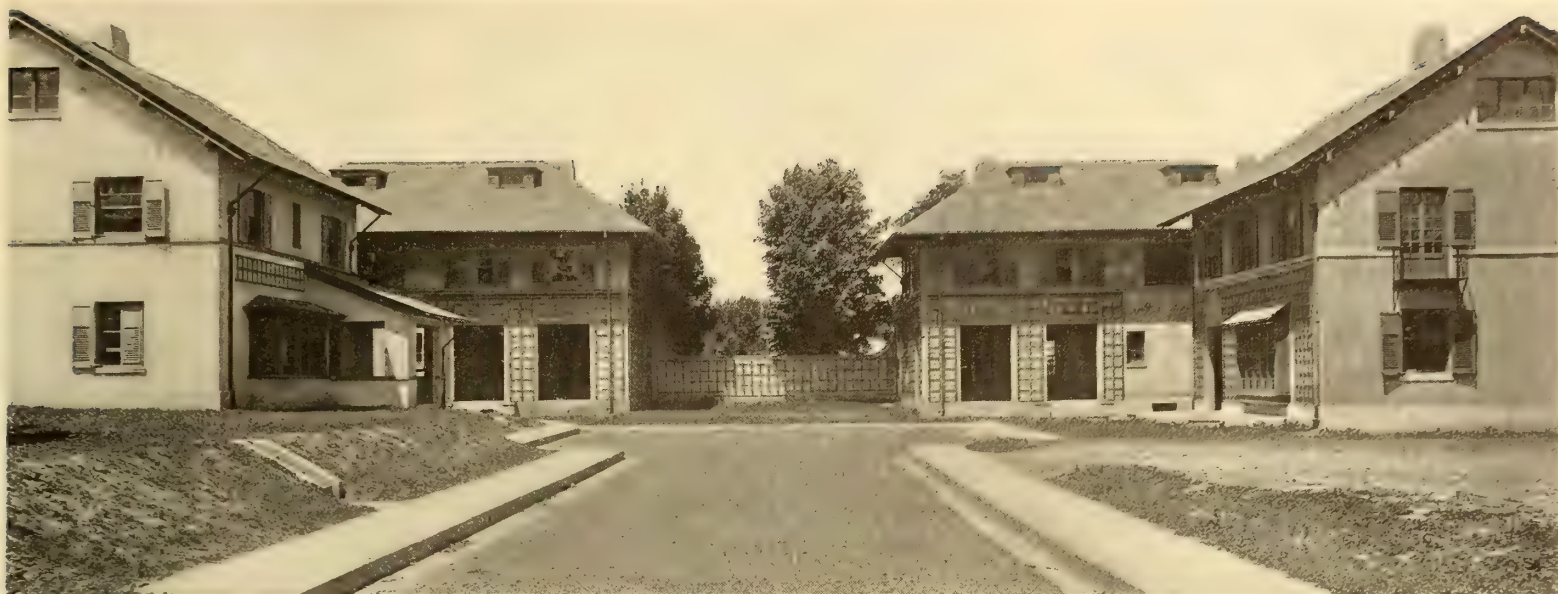
If radical changes cannot be made in the room occupied by the boy of the family, the lesser possibilities need not be disregarded, as a single effort, carefully made, towards improving the conditions is oftentimes the opening wedge for more complete alterations.



Bunks for a boy's room



Good design for bedroom furniture



The driveway end

The Artistic Treatment of Fireproof Houses

By Edith Haviland



THE house with a plastered, or stucco exterior has always given artistic satisfaction, but only within the last few years has it been united with a fireproof construction. This has been successfully accomplished by the adoption of terra cotta hollow tiles (long in use in chimney making) for walls and floors, covering them on the inside with the ordinary hard plaster, and, on the outside, with stucco cement.

While this reduces the danger of fire to a minimum, other factors that are potent in making the home of comfort and refinement are at the same time attained.

That the hollow-tile house is interesting to the intelligent home builder is evident in every neighborhood where one is in process of erection, as it is carefully scrutinized from its inception to its completed form, at first with a skepticism that is gradually and effectually overcome as its many advantages over ordinary wooden dwellings become apparent in concrete form.

Aside from its fireproof qualities the tile house is also waterproof and sanitary in more ways than one. Mice and vermin are practically excluded from making entrance. With the exception of the wooden trimmings the expenditure for outside repairs is very slight—offsetting in considerable measure

the extra outlay exacted by the careful construction of the tiles. Desirable, also, is the feeling of permanence that material of such strength insures to its owners.

The conservation of heat in the cold weather has, by scientific tests, been shown to be three times as great in the tile house as in one that is constructed of wood, and the coolness of the house in summer, acting on something of the same principle as the thermos bottle, is also noticeable.

Aside from these very practical claims of the tile house, its appeal to the lover of the artistic is undeniable. Experiments in both directions have naturally been made by progressive architects and up-to-date builders, and, of recent

achievements on a large scale, the Kellogg-Green houses situated in Orange, N. J., embody some qualities of unusual merit.

In the architectural lay-out of the plot of ground reserved for this group of houses, a peculiarly difficult problem was involved, as its length was considerably out of proportion to its width, affording no outlet except the entrance. In their solution the architects, Messrs. Mann & McNeille, of New York city, have made a clever spacing of the building lots (some twenty-four in number) adopting an irregular building line and creating a variety of house designs. Some landscape gardening with some or-



One of the doorways



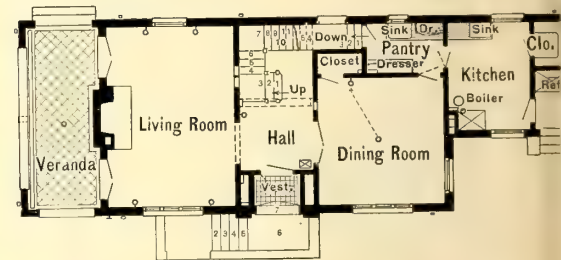
The entrance



Lattice work added



Italian shutters painted blue-green



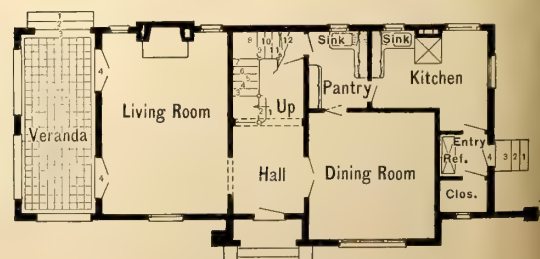
First floor plan



House at t



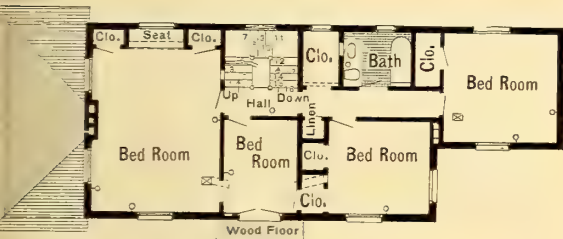
The piazza forms part of the house



First floor plan



the decorative effect



Second floor plan



entrance-way



Second floor plan



One of the fireplaces



A built-in sideboard



Iron balconies are a feature



A home-like exterior



The entrance



Lattice work adds to the decorative effect



One of the fireplaces



A built-in sideboard



Italian shutters painted blue-green



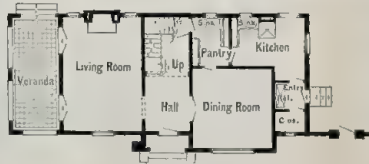
First floor plan



Second floor plan



House at the entrance-way



First floor plan



Second floor plan



Iron balconies are a feature



The piazza forms part of the house



A home-like exterior

namental touches in the way of out-door furniture have been added since the photographs were made. A long, center driveway was imperative, but this has been balanced by a formal entrance and a graceful loop at the extreme end.

From the farthest point of view the eye is arrested by the contrasted colors of the roofs, side walls and trimmings, which bear a touch of resemblance to the Old World buildings from which the exterior lines have been adopted. Some of the roofs are of red tiles, others are of colored slates, violet, blue and green, laid like shingles.

The shutters, some of them made after the Italian manner, the casement windows, hooded doorways and mosaics laid in the stucco, contribute to the quaint charm of the architectural lines.

The American fondness for living out of doors in the warm weather, which finds expression in some kind of porch or piazza attachment to every suburban house, has not been disregarded, but, rather, made a significant part of each plan, appearing not always in the front, but sometimes at the side or back in an attractive veranda. Iron balconies on the second floor of original designs the better to meet a decorative effect, and the housewife's need for the airing of clothes and rugs, are also kept in mind.

With the cellars of poured concrete, the floors of reinforced concrete, walls and partitions of tiles and roofs of tiles or slates, the solidity of these houses—aside from their fireproof qualities—is more than assured.

Floors of Welsh quarry tiles have been laid in the vestibules and halls as the most sanitary surface for these situations, imparting also an agreeable color note that will, doubtless be repeated in the wall coverings and window curtains, and intermixed with the blues and dull reds of Oriental rugs.

The fireplace is universally conceded to be the architectural focus of a room, a fact that has been most artistically presented in each of the Kellogg-Green houses. The designs for the woodwork have been, in every instance supported by brick or tile facing, in harmonizing colors and styles. The Moravian Pottery has been drawn on for the latter details, besides plaster reproductions of classic sculpture. The hearth stones, seemingly a minor item,

have also been carefully selected to conform to the fireplace scheme as a whole.

In the choice of wood for the interior finish the preference has been given to chestnut for the first floor, on which gray, green or brown stain has been applied. In some of the houses the finish for the floors corresponds with the trim. On the bedroom of the second story the wood finish is painted white.

A marked innovation is the installing of glass-paned, hinged doors in place of the ordinary sliding doors between the principal rooms, to be screened with net or silk, if desired, or to be left with the glass exposed for increasing the

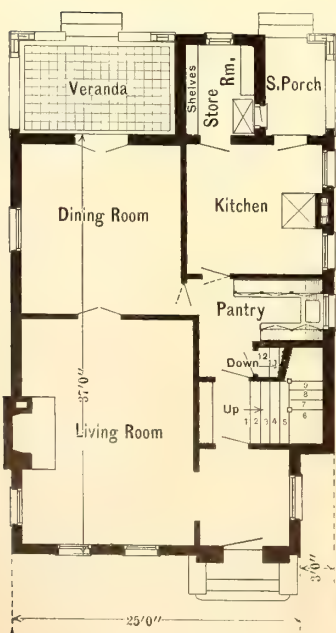
light. Another picturesque effect is contributed by raising one of the living-rooms of the first floor above the general level, as, for instance, where the dining-room is reached by three wide, low steps from the library.

Such of the houses as have been already papered indicate the resourcefulness of these houses for an artistic expression that usually belongs only with dwellings of high cost. Lacking the numerous jogs and angles of a frame building, the simplicity of line exacted by the tile construction appears to advantage when the decoration of the wall is attempted, giving a feeling of space even in the most contracted quarters.

The imported wall-papers, French, English and German, selected for the different rooms, have been considered, not alone for their individual effect, but also for the harmon-



A comfortable kitchen



First floor plan



The windows are effectively placed



Second floor plan

ious vista presented throughout the entire floor. Nowadays, a great deal is expected when wall decoration is attempted, and one does not often find these ideals realized in houses that are built by others than their owners. In fact, the ready-to-live-in dwelling is more often than not made commonplace by aggressive wall coverings and heavily-decorated ceilings. In the houses described, the wall-papers are so artistically related to the tones of the woodwork and the spaces they occupy that they are suggestively helpful from an educational point of view.

In the selection of lighting fixtures a hint of what can be introduced in the tile houses is given as a model for possible purchasers, although a positive choice is not made by the owners except in one building. Such permanent furnishings as lighting fixtures are both a puzzling and a vexatious problem, particularly when they cannot be seen in



Hallway floor laid with quarry tiles

place or must be taken from drawings or prints. The advantage of having some examples fitly chosen for this group of houses is obvious.

In the arrangement of the rooms it is apparent from even the slightest scrutiny of the floor plans that every detail makes for generous spaces. Great attention, too, has been paid to the practical end of home making, and no facility has been left unconsidered that relieves the housekeeper's tasks. This is apparent in the equipment of the kitchen, laundry and butler's pantry in which some unique, modern devices are installed. Even in these most utilitarian domains the artistic feeling that permeates every dwelling in this little community of tile houses is allowed expression.

The group of illustrations on the double page gives something of an idea of the variations that may be played with fireproof construction of moderate cost.



From the library looking into the hall



GARDEN NOTES

CONDUCTED BY CHARLES DOWNING LAY



PLANTING IN THE FORMAL GARDEN



HE landscape architect has few more interesting problems than planting the formal garden, because a formal garden demands the fulfillment of so many different conditions.

It should look well the year round, even in winter it must not be utterly desolate and the planting must help and accentuate the design of the garden, not hide it or blur its strong outlines. The flowers themselves must be beautiful and interesting—good in the mass and with a long season of bloom. Further than this they should be rugged in constitution and need little coddling.

The plan which is reproduced here is intended to fulfill all these conditions as closely as possible.

To begin with its spring appearance, to follow it through the summer and fall to its winter rest will perhaps be the easiest way to study the planting.

The first flowers will be the tulips in the five middle beds on each side of the pool, these with the green grass of the paths will be brilliant and striking. Each bed should be planted with a border of white tulips to give uniformity to the whole scheme, but the colors used in the centers of the different beds can be varied as one likes, though they must not be mixed in a single bed. The garden will be more gorgeous if they all bloom at one time, though there is something to be said in favor of making the circular beds a trifle later so that they will be just passing out of bloom as the eight corner beds of single late tulips begin.

One great difficulty in a formal garden is to find a place for all the annuals which one must have for cut flowers and for the brilliancy of their effect in the garden. Some of them have been used as borders for the tulip beds next the gravel paths. These can be set quite early, soon after the tulips begin to bloom, and they should last in good condition throughout the summer.

After the early tulips are past and their leaves withered, they should be taken up and stored for replanting in the autumn. In three years or less they will have to be replaced by new bulbs. The late tulips are better left in the ground and they will increase and grow better year by year.

While the tulips are blooming the perennials in the borders will begin. Alyssum, Arabis, Primula, *Gypsophila repens*, cerastium, and iberis blooming at the same time are soon followed by dicentra, iris, aquilegia allium, and hesperis.

The attempt has been made in the borders to have flowers in generous masses and at the same time to separate them so that there will be no clashing of colors and to mix early and late things so that at any time there will be no large part of the garden without flowers; at the left of the tea-house, for instance, the border plants will bloom first (except plumbago, which comes in September), followed by two groups of German iris, then the hesperis and peonies. *Campanula carpatica* is more or less continuous, like the heuchera. After the peonies will come the statice, then the hollyhocks, phlox, Funkia, dahlias and golden glow, which ends the season in October.

At the right of the tea-house the material is almost the

same and I think the effect of these beds as seen from the house will be sufficiently brilliant at any time in the summer. In some cases two plants which bloom at widely separated seasons are planted close together so that one when in bloom may hide the deficiencies of the other at that time. Thus it is with *Anemone del Japonica* and *Papaver Orientale*, and with the cottage tulips and chrysanthemum.

In other cases it has been thought desirable to plant things in proximity which bloom at the same time. Delphinium and *Lilium candidum* is a classic combination of colors which will be repeated here by *Aconitum autumnale* and phlox Miss Lingard. Another good arrangement is that of the yellow *Iris pseudacorus* and the blue *Iris Siberia*. The colors of the tulip beds are surpassed later in the year by the annuals which take their place and it is in such a time that the annuals are indispensable because of their profusion and the certainty of their blooming, their strong colors and the fact that they are at their best in July and August when other things begin to fail and because they can be arranged in patterns to assist the layout of the garden.

In this garden, unfortunately there is no place to grow cut flowers, so that the choice of annuals is perhaps not the same that it would be if the mignonette, heliotrope, asters and verbenas could be grown somewhere else, and their places taken by less sprawling or more brilliant flowers. But we cannot have a garden without these things any more than we can have it without hyacinths and gladiolus and, unsatisfactory as they are in the garden, such compromises as these make life exciting for the garden designer!

Roses do not look well in a garden, but we must have them here and if the hybrid teas prove hardy, we shall not regret their inclusion because they are small and less wild looking than the hybrid perpetuals, and bloom throughout the season. The rose columns will, of course, have a Dorothy Perkins!

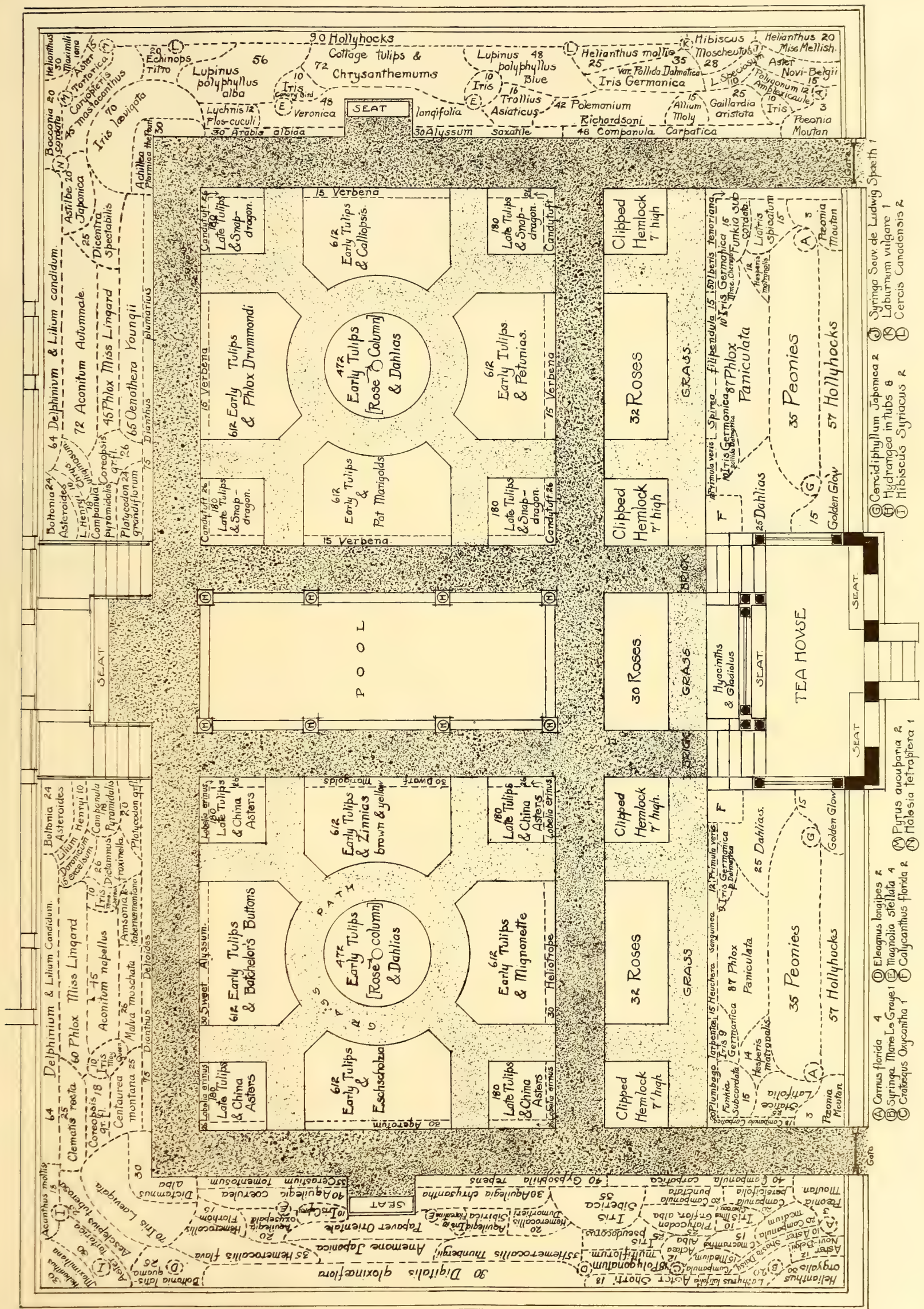
The shrubs are planted in the garden, not only because they are beautiful in flower, but to relieve the monotony of level and to give height and contrast to the whole planting which is too uniform in effect when herbaceous perennials are planted in such large masses. In winter they will provide delicate color and relieve the bareness when all the beds are covered with straws.

The four big clipped hemlocks will after a season or two have grim charm in winter as they stand, snow capped and dark; watchers of the garden's long night.

In summer their deep tone and hard outlines will make the delicate flowers more beautiful by contrast. As a matter of design in planting they accentuate the lack of symmetry on the long axis of the garden, and make the side where they are quite distinctly the back of the garden.

It would be just as instructive to know why some plants are left out of the garden as to know why these are in, but it would be a much harder task.

Personal idiosyncrasy, sentiment and affection account for the inclusion of many of the flowers. There are many more which we would have there if we could find room for them or if we felt sure that they would succeed, or if we knew that they could endure the winters in this garden which is in northern Connecticut.



Plan of planting in the formal garden

Suburban Windbreakers

By E. P. Powell



READER of AMERICAN HOMES AND GARDENS wishes to know what will serve best for a village windbreak. He complains that the wind piles the snow in heavy drifts around his yard, while in summer the draft brings in dust. I understand his difficulty to be where houses are not very far apart. In some cases the draft starts at quite a distance, gathering force and picking up side drafts until it throws a pile directly in your path. A group of Norway spruces, or a single large spruce planted in the core of such a draft, will frequently break it up. A sweep of wind, however, needs a hedge or a longer windbreak of trees. I prefer arbor vitae where the sweep is broad. This can be used to form a hedge five, ten, or fifteen feet high, as you please. It is good for forty or fifty years, if trimmed once a year, in April or early May. None of these evergreens must be cut later than that, nor must they be sheared three or four times in a season. Cut just once, before the new growth starts, and then let them alone till another year. The shearing must be rather close, but never inside the green leaf. There are no dormant buds on evergreen twigs that will start out to remedy such trimming.

Hemlock is more beautiful, and in the very long run may be the best. If properly handled it can be kept in use for a hundred years. It will bear shearing better than the arbor vitae, and is as beautiful as a bed of carnations when growing. The form of the arbor vitae should be kept conical, but for some reason the hemlock likes to grow with a rolling top, or roundish. The hemlock can be kept low better than the arbor vitae; but where you want a stiff, stout, and tall windbreak the arbor vitae is the best. If a breach occurs in one of your hedges cut away the lower limbs and set a new plant. Do this before you undertake to cut away the dead or dying bush. However, bear in mind that these breaches almost invariably occur, not from the cold weather, but from overpruning. The Norway spruce, and some of the pines will make very good hedges and windbreaks, so long as they can be kept within bounds. They are likely to become woody and irregular.

Of deciduous plants there happens to be one so much finer than all the rest for hedging, that it forms a class by itself. I refer to the Tartarian or bush honeysuckle. This occurs in three or four different colors, and these do not form growth with equal rapidity. The red makes a smaller bush, with lighter twigs, than the pink. The white is stronger, but still more irregular than the pink—which should be selected for forming a really perfect line of growth. It grows with great rapidity until it begins to blossom, and then it rises more deliberately. The natural height in good garden soil is about ten or twelve feet. It is very compact, and after it reaches eight or ten feet it inclines to hang over some of its limbs. It will bear shearing all you please, but of course you must not undertake to make it as symmetrical as an evergreen hedge. Simply cut away obtrusive branches, and let the hedge or windbreak express itself with irregular contour—slightly restrained. In May the flowers cover the hedge for about two weeks. These are later covered with brilliant red or yellow fruit, of which the birds are very fond. They ripen just in the raspberry and blackberry season, drawing the birds away from your field. If you wish to collect the birds about your home, either in the village or the country, you

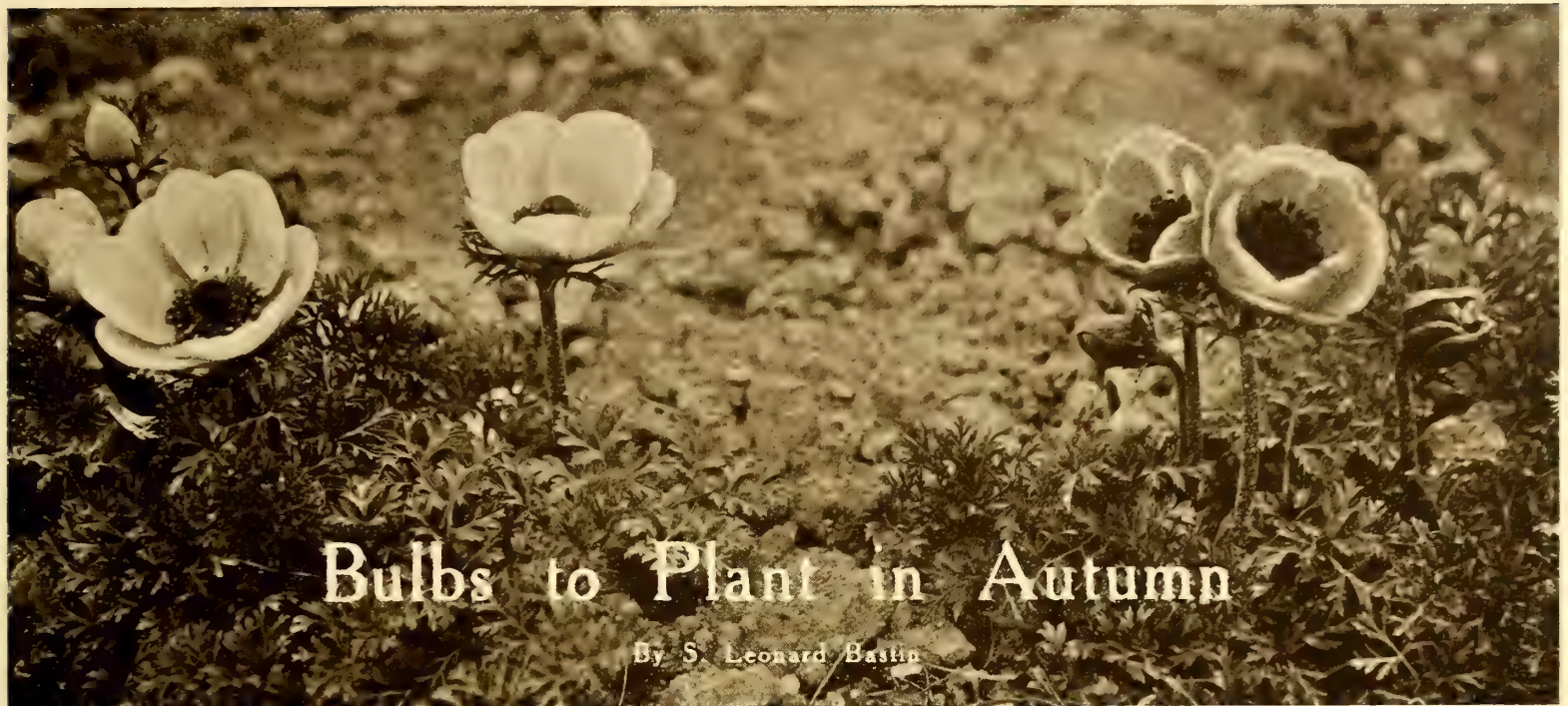
can do it by having the tables spread for them with these honeysuckle fruits.

Beside the Tartarian honeysuckle I have not one special preference. The common lilacs will do very well, but they run to suckers so badly that they will become nearly flowerless, unless constantly cleaned of these. A row of the new French lilacs, set about ten feet apart, will be exceedingly beautiful, and useful as well. These are mostly doubles or semi-doubles, and in a great range of shade. The Persian lilacs are all right to fill up a gap or stop a draft, but the stalks are too slim, and inclined to drop over with their heavy heads of flowers. The barberry is sometimes used, but the common barberries do not make good form, lopping in every direction. The Siberian is much better, not growing so high, and is very compact; but I have a seedling which grows about six feet high, and with flower stems longer, as well as far more brilliant fruit—this variety makes a very good hedge row. The weigelas are perfect enough for a while, and very beautiful, but the old stalks get brittle and die out unaccountably. Perhaps the hydrangias can be set down as really good. The new variety of white flowering is almost perpetual in bloom, and hardy as an oak. I think it was introduced by E. Y. Teas, of Evansville, Indiana, at least he has it in stock. Some other shrubs will do fairly well, and there may be some that are as good as the Tartarian honeysuckle—although I have not found them.

I am particularly partial to a close row of low-headed dwarf apples. I am sorry that these trees are not more common in suburban yards; and I think nurserymen have, as a rule, given over cataloguing them. They grow about ten feet in diameter, or can be kept about that form, and some of them, in fruit, are most beautiful. In flower they are great nosegays. A row of them, with limbs reaching close to the ground, and growing compact, will break the wind admirably in summer, and split it up pretty well in the winter. The roundheaded Seckel pear is much of the same sort, giving you also a satisfactory load of excellent fruit. Other pears, like Buffam, Sheldon and Louise Bonne will grow quite close together, and very erect. These also will furnish fruit and sweet flowers as well as break the wind.

Grape vines are never used as much as they should be. Looped and twined all about a tree, or a row of trees, and hanging down their festoons of limbs and grapes, they make a wall almost as perfect as one of boards. Or you may erect a strong screen and run your grapes over it. Here again you get bushels of grapes as well as a windbreak. The Virginia Creeper can be used, if you prefer the brilliant color of autumn; but if I used the Creeper I would plant with it the common white clematis (the Virginiana), or the paniculata, which blooms quite late in the season and is superb both in leafage and flowers.

Of course I am leaving out the consideration of hedges and windbreaks for the open country. An ideal windbreak of this sort is a belt of trees as tall or taller than the orchard itself. Such windbreaks should be planted as early as the homestead is bought or designed. Good trees to start with are mountain ash, wild cherries, lindens, and Russian mulberries. In the southwest the plum tree grows in thickets that are of decided value. The catalpa is admirable everywhere, east or west or south. Most of the pear trees are hardy, and make good windbreaks, if the tight growing sorts, like Seckel, are planted with Buffum or Sheldon.



Bulbs to Plant in Autumn

By S. Leonard Bastin

THE general trend of modern requirements is to seek the most for the least possible trouble. There is so much to do in this twentieth century, that in all walks of life it is the quickest and easiest way to an end which will be followed by the majority. Whilst the gentle art of horticulture is far removed from the hurry of the times, yet one must recognize that there is a large number of people, genuine flower lovers, who have little time to spare for the prosecution of their hobby. For these, the bulbous rooted plants might have been specially created, for it is not beside the mark to say that in a bulb one has a plant ready-made wrapt up in a little packet. With the most ordinary culture the sleeping plant may be induced to display its wealth of floral beauty. There is, however, a right and a wrong way even in the simple matter of growing bulbs and it is proposed to offer a few practical suggestions largely the result of personal observation on the part of the author.

As a rule the gardener when buying his bulbs is not sufficiently careful to see that he secures good ones. Small, imperfectly developed bulbs are always dear, and should be avoided at any price. Roughly, the points of a good bulb may be summed up in two words—weight and firmness. If solidity is

wanting mere shape goes for nothing, and as a matter of fact some kinds of bulbs are naturally rather rough and uneven in appearance. It is always a wise plan for a person without practical knowledge on these matters to place the orders with a firm whose reputation for straight dealing is established. Send along your requirements as early in the autumn as possible so as to get the pick of the new season's stock, and as a general rule avoid clearance lots of bulbs and auction sales of these articles. It is quite likely that on these occasions anyone may pick up

a real bargain lot, but on the other hand the chances are much more in favor of the buyer taking home with him a parcel of bulbs the majority of which will never throw flowers at all.

From time immemorial there has been much discussion as to the best time for planting bulbs outdoors. Some professional growers hold that the bulbs should always be put in at the earliest possible moment, whilst others who are equally successful, hold that the late autumn is the best time. As a matter of fact, garden instruction books notwithstanding—as long as the bulbs are in place before the frosts of winter grip the land there is no need to trouble about anything else. A question on which it may be of interest to say a few words is as to the necessity of replanting supposing a certain number of bulbs were in the garden last season. Practically speaking all



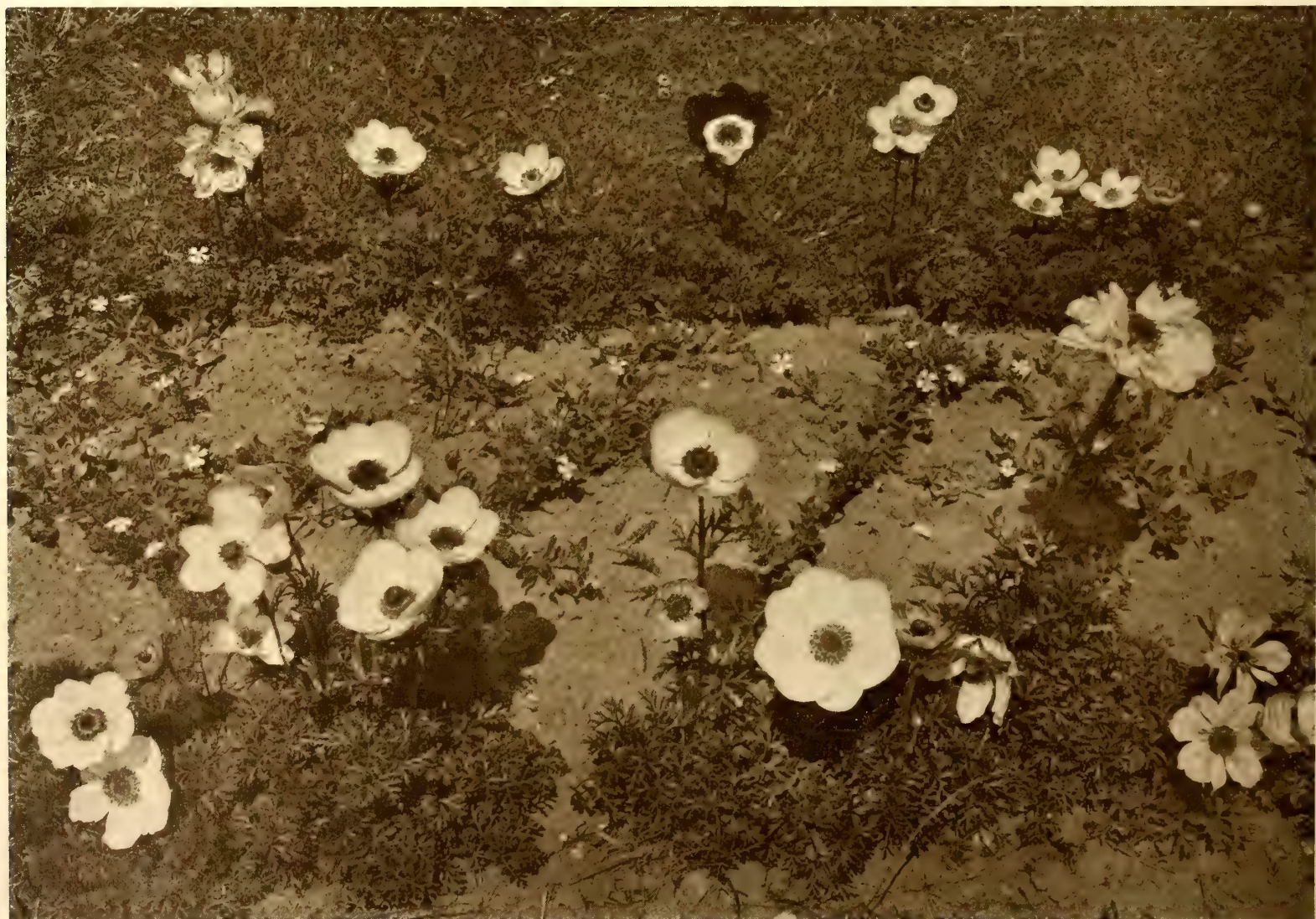
A clump of poppy anemones



Grape hyacinths are charming border plants

kinds of Hyacinths steadily deteriorate after their first blooming in an ordinary garden, and if a good show is wanted these should certainly be replaced. All the early sorts of Tulips behave in the same disappointing way, although strangely enough the later kinds, those usually sold

as the May Tulips will last for many years and even show signs of increase. The same is true of the Narcissi, if the soil is of a favorable nature, on which point a few remarks will be made later on. All the daffodils increase quickly, and after the flowering time is over, and the foliage has



A bed of poppy anemones is an ornament to any garden



A fine white tulip which should be planted in sunny places



Hyacinths look best grouped together



All kinds of daffodils are fine subjects and will grow anywhere



The Q. Polyanthus narcissi look charming planted in groups



How to divide daffodil bulb—the offshoots on both sides will grow to make flowering bulbs

died down it is well to lift the bulbs and take away the young offshoots which will be found by the side of the parent root. The method of removing these is illustrated in an accompanying photograph, and the youngsters should be planted out in a nursery bed for about a year when many of them will have grown into flowering size. Such things as Snowdrops, Scillas, the pretty little Grape Hyacinths, and Crocuses will go on increasing from year to year. With the last named it is very desirable to arrange a replanting of the bulbs in the ground every other season, if not each year. It is the curious habit of Crocuses to develop their new bulbs right on the top of the old ones, and as a natural consequence the roots get nearer and nearer to the surface of the soil. Of course in a state of nature the accumulation of dead foliage insures that the bulbs shall be sufficiently covered, but this fact does not operate in a garden, where in the course of a few years the roots will nearly stand up bare of mold.

All the spring flowering bulbs are very accommodating regarding the question of soil, and in a general way it may be said that they will grow anywhere. A stiff clogging con-

dition is the least suitable and if one's garden is of this nature it will be well to lighten the ground with sand or some such material. It is well to remember that generally speaking all bulbous plants like light soils. On the whole Narcissi seem to suffer least from a rather damp position and indeed some kinds may be said to flourish in such circumstances. The question of the depth at which bulbs should be planted is an important one, and it is safe to say that most people err on the side of not planting their bulbs deep enough. This is particularly the case in the colder parts of the temperate regions where there is a serious danger of the roots being damaged by frost. It must be borne in mind that however deep the bulbs may be planted the first heavy rains of the fall will cause a settlement in the soil which will materially lessen the protective covering, and leave the roots at the mercy of the first cold spell. Of course the bulbs must not be buried too far down, as, if the shoots have a very long way to grow up, they will become materially weakened by the effort. As a general all round rule, applicable to most of the spring flowering bulbs, it may be taken that about two and a half times the depth of any bulb, measuring from crown to base is a safe one at which to plant. An old-fashioned plan, but one strongly to be recommended, is that of covering the bottom of the hole in which the bulb is to be placed with a thick layer of white sand. This insures a rapid starting of root growth and will reduce to



Dry crocuses should be taken up and planted deeper every few years. The new bulbs are formed on top of the old ones, as shown in the picture



A cluster of crocuses are pleasing to look on in early spring

a minimum the number of bulbs which rot away because they cannot cope with the moisture surrounding them.

Although they cannot strictly be called bulbous plants, the splendid Poppy Anemones should always find a place with the kinds mentioned above. These are quite the finest of the spring flowering plants and whether they are grown for garden effect or for gathering they are in every way admirable. Moreover they can remain from year to year in the ordinary border, and will increase considerably in a situation which pleases them. It is very important that Anemones should have a place in a thoroughly well-drained bed, and if there is any danger of water standing about the soil, the mold should be worked up to a considerable height above the general level of the garden. The roots, which strongly resemble dried ginger should be planted two or three inches deep—the time for doing so being in the early autumn. If the planting is spread over a few weeks this will insure a long succession of bloom from the early spring until very nearly the summer time. These Poppy Anemones are not shade seeking plants, and the more sunny the position the better. On a south border one may look for a goodly show of bloom in the autumn in addition to that which naturally comes in the spring.



CORRESPONDENCE



The Editor of *American Homes and Gardens* desires to extend an invitation to all its readers to send to the Correspondence Department inquiries on any matter pertaining to the decorating and furnishing of the home and to the developing of the home grounds. All letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this Department.

Problems in Home Furnishing

A PINK BEDROOM

"I AM writing you from New Hampshire," says Mr. J. V., "to ask you to kindly suggest a few ideas that will help me in making my chamber more attractive. Please consider in your reply the existing contents of the room—white painted woodwork, white iron bed, walnut dresser, white matting. The ceiling is low, with slanting beams irregularly placed. Can I use a wall-paper with a border on such a wall? Or must I use a tint? My favorite color is pink, and this I would like to introduce into my room in some way."

With a ceiling of such irregular lines it is best not to attempt a paper on the side walls with a border. Both the ceiling and walls may be kalsomined in a light color, or, a small lattice-pattern paper may cover them. If the latter plan is preferred, care should be taken to select a design that has no decided up or down to it. A tiny pink rosebud conventionalized with green leaves on a gray diamond-shaped lattice would start a very pretty color scheme for this room, and the cost of this paper for a single roll of eight yards would be forty cents.

Small rugs to lay beside the bed and in front of the dresser could be found among the French Wiltons at eight dollars each, in pink, ivory and green. The white dimity sold in dry goods stores for summer dresses, costing from thirteen to thirty cents a yard may be used for window curtains with an edge of linen lace.

A willow arm chair may be stained green and the seat cushion covered with pink flowered cretonne, with a loose down pillow for the back covered with the same material. A side chair will also be needed, with a night stand, and sewing table. These pieces of furniture may be of white enamel. The appointments for the dresser may have the favorite color introduced in decorative touches and also any piece of china used in the room.

COLORS FOR A HOUSE-BOAT

"A Sportsman" describes the house-boat which he is fitting up for use in the South in the winter, and inquires about adding some decorative features. "The deck is thirty-five feet long by twelve wide. The cabin is eighteen feet long by eight feet wide, and in this there will be two folding bunks hinged low to the wall, book shelves, gun racks, writing table, clothing hooks, fishing tackle, box seats for the bedding. At one end we wish to hang a portiere to divide the kitchen part. The cabin will be built of dressed yellow pine standing vertical. Shall we use plain red cotton material for portiere, window curtains and cushion covers? We would like an attractive combination of color with yellow pine. Also please suggest some chairs and seats for the deck that will give a distinctive touch to our winter vacation home."

A better combination than the turkey red cotton with the yellow pine would be orange color with green and blue. Some

of the sun-fast materials could be utilized to advantage in the cabin and on the deck. The window curtains of orange color, the portieres of shaded blue and green, the cushion and bench covers of a cretonne in which all three colors are united. A comfortable reclining chair for the deck, can be had in rattan in the natural finish, with an adjustable back and a footstool attachment. In this same material one may select an arm chair and an hour glass stand. Folding chairs of white canvas and varnished frames may be added for visitors. Grass matting rug may be laid on the floor, unless Navajo rugs in appropriate colorings can be afforded.

PORTIERES FOR A PHYSICIAN'S OFFICE

"I am about to replace the old door-hangings between my reception-room and private office, and would like to be advised as to a material that is double-faced, durable and appropriate. I am now using a double-faced velour, but do not care to duplicate this as I prefer a less shiny surface. I could use either brown or dark red. Is there anything known to your Department on House Furnishings to meet my need?"—Dr. B. W. R., New Haven, Conn.

The best material for a door-hanging for this correspondent is wool damask. This is made with a self-woven pattern that is not aggressive but breaks up the plain surface. It hangs in graceful folds and gives substantial service. There is a mahogany red and a tan and a dark brown from which to make a selection, and the price by the yard is \$2.85.

A BEDROOM SCREEN

A subscriber living in New Jersey describes her bedroom and asks about having a screen made to suit the furnishings. "My wall is covered with a pale blue texture paper, with a cut-out border of pink roses and green leaves. Over the white muslin curtains I have hung some cretonne with roses and blue ribbons in the pattern. On the floor I have some green velvet carpet made into rugs. Now I wish to add a three-panelled screen to stand in front of the door in the place of a portiere. The burlap screens with dark frames seem to me too coarse looking, and the ones made in Japan do not suit the coloring of the walls and hangings. What else is there that will be pretty and not cost over ten dollars?"—C. S. W.

An attractive bedroom screen to fit the conditions described in this letter could be made of the same cretonne that is already used for over curtains, tacking this on one side of the frame, and a plain or self-woven blue material on the inner side. There are numberless novelty materials from which to choose the latter, but the aim should be to match the tone of the wall-paper. The edges of the materials should be covered with blue guimp. An ordinary screen frame can be made by a carpenter or cabinetmaker if it cannot be bought ready-made at a furniture shop.

Garden Work About the Home

BULBS FOR FALL PLANTING

C. J. S. asks for suggestions about bulbs to plant this autumn.

Among the hundreds of bulbs offered in the retail catalogs, there are many which are little known but which are very lovely.

Allium Moly is an uncommon plant, yet its yellow flowers on a straight stalk are charming in April.

Allium Mutabile has white flowers turning to pink. It also blooms in April.

Allium Azureum with blue flowers in June is another good one. All are hardy and lasting. They can be planted in the garden or at the edge of the shrubbery, in last masses.

The poppy flowered anemones, so called, varying in color from white to scarlet and blue, are very beautiful, though somewhat difficult. They bloom in April and May and have flowers a couple of inches across.

The mariposa lilies are Californian bulbs, blooming in June and July. They need the protection of several inches of leaves or pine needles in winter. Like all tender bulbs the rain seems to harm them more than the cold, so they should have a wooden shutter over them in winter. All bulbs should be planted in a sandy loam and in a well-drained location. "Well drained" meaning that water must neither soak the roots nor stand on top of the frozen ground.

The largest bulb and the tallest flower is that of *Eremurus Robustus*, which has a stem six to ten feet high, bearing a raceme of pale pink flowers. It is slightly tender and needs some protection.

Ixias can be grown out of doors if they are covered with about a foot of leaves, and they seem finer than in the house. The covering must be taken off early and perhaps put back on cold nights.

One of the greatest delights in gardening is to grow things which are a little bit difficult and therefore unusual.

It is so exciting in the spring to see a bulb, planted months ago, growing and getting ready to bloom, and it is so interesting to see how near the plant comes to our mental picture of it! Then as a further delight there is the critical study of the flower while one decides whether it is really worth growing or not and in what characteristic its chief beauty lies.

BULBS IN THE HOUSE

It is fun to try different bulbs in the house, particularly new ones, so if you buy a number of different things plant one of each in a pot for indoor use. Some of them will do well, others will fail, but the results will all be instructive.

The more unusual and more difficult things to grow in the house are the bulbous Irises (English, Spanish and Dutch) the early iris (*I. histrioides* and *I. reticulata*), and the tender irises, such as *I. alata* and *I. susianus*. Dodecatheon I have tried indoors and found worth while. Blood root is easy, and Trillium excellent.

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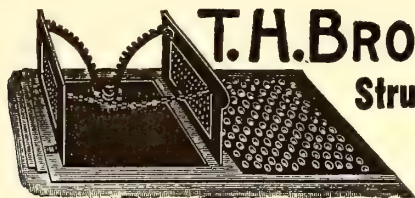
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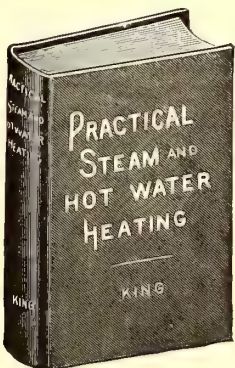
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SILVERING GLASS AT HOME

BY A. J. JARMAN.

A GOOD glass mirror, made with one's own hands, is a thing to be proud of. Mirrors are now seldom made by the tinfoil and mercury process, because of the dangerous character of the work, but pure silver is used instead. The silver process is not in the least dangerous to the workman. The formula here given is one that has been in use in several looking glass and art mirror factories in the city of London. The chemicals used must be of absolute purity (chemically pure) and all operations in preparing the glass must be carried out with care and scrupulous cleanliness. The surface to be silvered must not be pressed upon by the fingers or thumbs, they would leave an indelible impression.

The first thing to be done is to make a small table out of a piece of slate about $\frac{3}{8}$ or $\frac{1}{2}$ inch thick, 10 or 12 inches wide and 18 inches long. These measurements are not binding, any piece of slate about the above size will do. A wooden trough must be made with grooves at the top edges for the slate slab to rest in. There must be a space of 2 inches between the slate slab to the wooden bottom, as indicated in Fig. 1. In this space is a coil of pipe arranged as shown in Fig. 2. The pipe is of about $\frac{3}{8}$ inch bore, and through it steam is passed to raise the temperature of the slate slab to about 120 deg. F., in fact just hot enough for the hand to bear. The steam can be supplied from an ordinary tea kettle placed near the depositing table with a rubber tube connecting the coil to the spout of the kettle. Uniform heating of the slate slab is essential. The coil can be easily made of $\frac{1}{4}$ -inch iron gas piping, screwed into U-shaped cast-iron connectors, as shown in Fig. 2. The slate slab can be covered with black oilcloth and made perfectly level. The following stock solutions must be made up and carefully filtered through absorbent cotton, ready for use:

Stock Solution A.—Nitrate of silver, 3 ounces; distilled water, 10 ounces; strong water ammonia, $12\frac{3}{4}$ ounces. This solution must be stirred well and allowed to stand five or six hours, then add 10 ounces more of distilled water and filter.

Stock Solution B.—Rochelle salts, 4 ounces; distilled water, 20 ounces.

Stock Solution C.—Distilled water 40 ounces, protochloride of tin, 5 grains.

Clean the glass plate or plates with very fine rouge and water, taking care that no trace of grease whatsoever comes into contact with the glass or the cloths or chamois leather used for polishing. When cleaned, the plate must be flooded all over with the tin solution. Pour this solution off and wash the plate well with distilled water. Lay the plate wet side up upon the table, with four clean wood wedges at each corner. Let the glass rest on the wedges, so as to allow a slight adjustment, if required, for leveling. The mixture for silvering is made up as follows:

Distilled water, 20 ounces; stock solution B, 1 drachm by measure; stock solution A, 1 ounce by measure. The glass plate being quite level, and still wet, pour this mixture carefully and slowly upon the center. It will flow evenly all over until it stands about one-eighth of an inch deep all over the plate. Any tendency to run to one end must be rectified by the wedges. The plate now being completely covered with the silvering mixture must be left to itself for about two hours, the heat being kept up during this time, and when it is found that the whole of the silver has been deposited, the liquid must be poured off by tilting and allowed to run into a stoneware crock and

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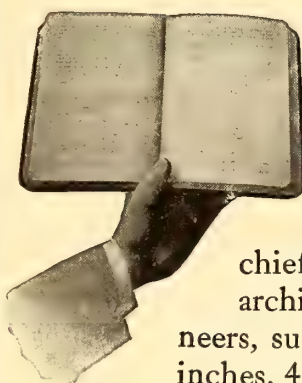
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saved for the waste silver it contains. If it is desired to increase the thickness of the deposit of silver, the operation must be repeated as soon as the silvering is complete; wash the plate well in a soft stream of running water, stand it cornerwise to drain and dry. When dry, the following protective varnish must be used as a coating to protect the deposited silver: Shellac, $\frac{1}{2}$ pound; wood alcohol, 6 pints. As soon as this coating has dried it must be painted over again with the following paint: Red lead, $\frac{1}{2}$ pound; white lead, $\frac{1}{2}$ pound; mixed with enough boiled oil and a small quantity of turpentine to make a good covering with a single coating. A small quantity of gold size must also be added to insure quick drying and a tough adhering quality. The mirror is now ready for framing. If much work has to be done, it will be advisable to cover the slate all over with a piece of felt, and keep the felt wet during the operation for two reasons: First, no pieces of woolen fibre can settle upon the plate, and secondly, the heat from the slate slab is communicated to the glass better than from a dry surface.

For a regular workshop a very good size is 4 by 7 feet, with a gutter cut around the slab, so that the spent silvering liquid can run from the tilted plate, around the table, and be collected by running through a hole at one corner. In this case the liquid will be sure to come in contact with the felt. This will prove of no consequence, because in time it will become saturated with silver, which will realize twenty times its first cost when sent to the silver refiner, and not only pay for a new felt covering, but increase the size of the pocket book at the same time.

TO bleach feathers or plumes with Peroxide of Hydrogen—1, preparation of the feathers. The feathers are freed from grease in petroleum benzine. For this, two baths are required, in each of which the feathers remain 3 to 4 hours, being from time to time moved about. While in a wet condition, the feathers must not be violently swirled about or shaken. The fat being thus removed, the feathers are dried in a current of air at a moderate heat. 2, Bleaching bath. The technical 3 per cent. peroxide of hydrogen solution is mixed, stirring in the meantime, with so much spirits of sal-ammoniac, until it no longer turns blue litmus paper red, on the other hand, the red litmus paper becomes faintly violet. 3, Bleaching. The feathers, prepared in accordance with 1, are immersed, at ordinary temperature, in the bleaching bath, until they are completely covered with the fluid. The bleaching bath should be in a glass or earthenware vessel, and protected from light. From time to time the feathers must be moved about. According to circumstances the bleaching is complete in 1 to 2 days. A series of baths, to be systematically exhausted, is to be recommended. Bleaching by dipping and drying. The feathers, prepared according to 1, are dipped in the bath 2, allowed to drain and dried in a moving current of air; the operation, after perfect drying, to be several times repeated. 4, Subsequent treatment. Violent movement to be avoided. From the bleaching bath, the feathers are to be transferred to a bath of distilled or rain water and gently moved about therein. When the water has run off, transfer them to a bath of alcohol, possibly mixed with ether, then dry them in moving warm air. The dry feathers must be repeatedly dipped into benzine and this evaporated by moving in the air. Draw them over the sharp edge of a knife and curl them.

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The Cost of Manufacturing Denaturized Alcohol in Germany and German Methods of Denaturization are discussed by Consul-General Frank H. Mason in *Scientific American Supplement* 1550.

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In *Scientific American Supplement* 1581 the Production of Industrial Alcohol and its Use in Explosive Motors are treated at length, valuable statistics being given of the cost of manufacturing alcohol from farm products and using it in engines.

French Methods of Denaturization constitute the subject of a good article published in *Scientific American Supplement* 1599.

How Industrial Alcohol is Made and Used is told very fully and clearly in No. 3, Vol. 95, of the *Scientific American*.

The most complete treatise on the Modern Manufacture of Alcohol, explaining thoroughly the chemical principles which underlie the process without too many wearisome technical phrases, and describing and illustrating all the apparatus required in an alcohol plant is published in *Scientific American Supplements* 1603, 1604 and 1605. The article is by L. Baudry de Saunier, the well-known French authority.

In *Supplements* 1607, 1608, 1609 we publish a digest of the rules and regulations under which the U. S. Internal Revenue will permit the manufacture and denaturation of tax free alcohol.

A comparison of the Use of Alcohol and Gasoline in Farm Engines is given in *Scientific American Supplements* 1634 and 1635 by Prof. Charles E. Lucke and S. M. Woodward.

The Manufacture, Denaturing and the Technical and Chemical Utilization of Alcohol is ably discussed in the *Scientific American Supplements* 1636 and 1637 by M. Klar and F. H. Meyer, both experts in the chemistry and distillation of alcohol. Illustrations of stills and plants accompany the text.

The Sources of Industrial Alcohol, that is the Farm Products from which alcohol is distilled, are enumerated by Dr. H. W. Wiley in *Scientific American Supplements* 1611 and 1612 and their relative alcohol content compared.

The Distillation and Rectification of Alcohol is the title of a splendid article by the late Max Maercker (the greatest authority on alcohol) published in *Scientific American Supplements* 1627 and 1628. Diagrams of the various types of stills in common use are used as illustrations.

In *Scientific American Supplement* 1613 the Uses of Industrial Alcohol in the Arts and in the Home are discussed.

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CARBURETERS, a subject of immense importance to automobilists and the users of oil engines, is well treated in *Scientific American Supplement* 1508.

EPICYCLIC TRAINS, which play an important part in toothed gearing, are ably described in *Scientific American Supplement* 1524.

Each number of the *Scientific American Supplement* costs 10 cents by mail. Send for 1910 Supplement Catalogue FREE to any address.

MUNN & COMPANY

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New York

DENATURED ALCOHOL FROM CACTI

BY P. E. M'CLENAHAN.

IF the great Southwest is ever reclaimed and made to produce vegetation that will be profitable, it must be done by developing the native plants instead of attempting to introduce new species and trying to acclimate them. With this idea in view, the United States Department of Agriculture has been directing the experiment stations and encouraging work upon the cacti.

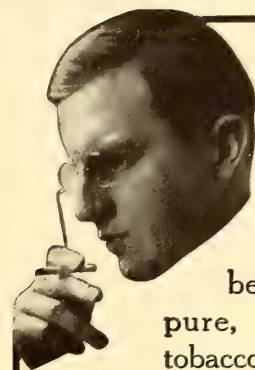
For more than six years the experiment station at Las Cruces, New Mexico, has been experimenting with the prickly pear and other cacti. This species has been planted, and it was found that by throwing it upon the ground 85 per cent. of the pieces grew, while only 91 per cent. of the parts planted in a furrow grew. The rows were planted ten feet apart, and then left without cultivation, irrigation, or attention for three, four and five years. By this time the rows had spread until they were from six to eight feet wide, and only left a small path between them.

Then began a large series of experiments. The fruit of the cactus (tunas) was gathered. It is almost as large as an egg, of a dark red color, and filled with seeds. The coloring matter was first extracted, and found to make an excellent fruit coloring for jellies and confectionery. Then the sugars were examined and six kinds were found, and after long, tedious processes, each sugar was fermented and in time turned into alcohol. Then came careful weighing and mathematical calculations to determine the amount of denatured alcohol that could be produced from an acre, and the minimum of cost.

Final deductions gave most satisfactory results, and it was proven that \$150 worth of denatured alcohol could be produced per acre after an average growth of four years for the plants. At this rate a quarter section of now arid land could be made to yield a gross income of \$24,000, and this would be almost a perpetual yield, as the fruit is borne annually, and the plants need no replanting, cultivation, or irrigation, and grow upon the poorest soil in the arid regions.

BOATS OF REINFORCED CONCRETE

BOATS were first constructed of reinforced concrete by Gabellini in Rome. They have been described in these columns. Concrete boats are now made in Germany. In April, 1910, a scow intended for use in dredging and similar work was launched in Pomerania. The boat is 33 feet long and 13 feet wide, and has a capacity of 22.5 tons. It consists of four watertight compartments. The end compartments are decked and serve only as air chambers, while the middle compartments are open at the top and can be used for the reception of cargo. The total depth of the boat is about 4½ feet; its weight is 17 tons, and its draft when unloaded is 20 inches. It is constructed like an iron or wooden vessel, of transverse frames, longitudinal beams, and plates. The plates are about 3 inches thick. The frames and beams are 5 x 10 inches. The bulwark is stiffened between the frames by a plate 8 inches high and 1½ inches thick, to which are attached oaken buffers extending entirely around the vessel. According to the *Engineering News*, scows made of reinforced concrete are also to be used in the dredging operations of the Panama canal. One of these scows is already launched. It weighs, complete, 27 tons and has a draft of 4 feet.



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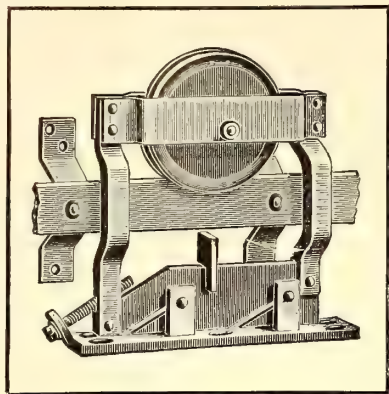
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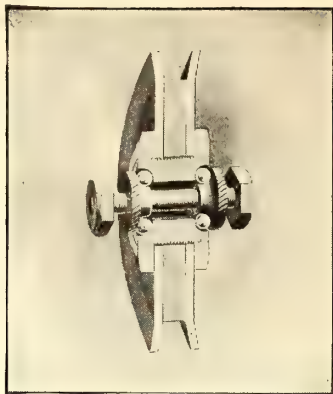
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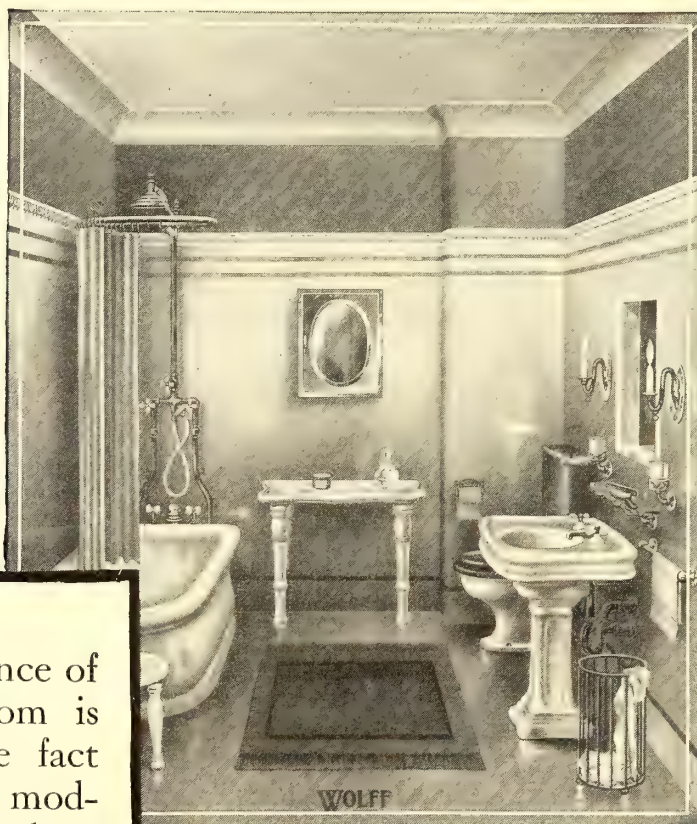


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PRESERVING FISH IN PAPER

CAPT. A. SOLLING, Danish fisheries agent in London, has for some time been experimenting with the packing of fresh fish in specially prepared paper, and has reported interesting results, which Consul-General Wallace C. Bond, of Copenhagen, reviews:

The main point in the preservation appears to be to inclose the fish as free from bacteria as possible in some cheap and convenient material which will keep out the air and prevent the intrusion of injurious aerial bacteria. Another important feature of fish preservation is to prevent the ice water, with its injurious bacteria, from contaminating the fish, and at the same time to apply the frigidity of the ice in order to prevent the development of bacteria that might be already in the fish.

By the Solling method of packing the fish in the paper before placing them on the crushed ice, the air is excluded and the ice water is prevented from reaching the fish. The effect of the ice through the paper prevents the development of any bacteria that might be already in the fish. In order to attain this result it is absolutely necessary that the fish be treated while alive, or at least when quite fresh, and it is therefore better to undertake the treatment on board the fishing boats.

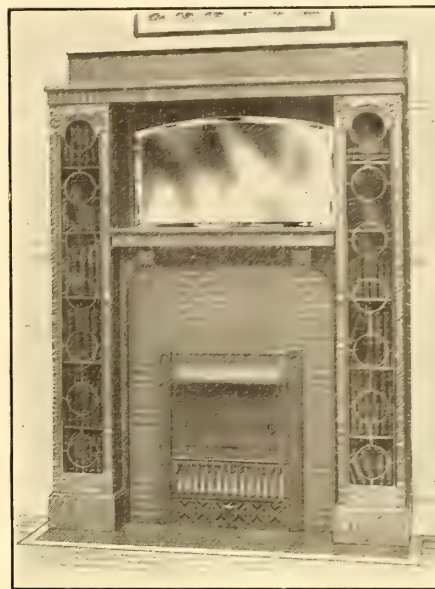
The fish should be cut while it is yet alive, the insides removed and the gills cut away; the head, however, ought always to be left. The sound, where such is found, is cut through, lengthwise, and all the blood under it is removed. The fish must be cut so far back that all the blood accumulated at the anus can easily be removed. The fish is then cleaned and scrubbed well in salt water, inside as well as out, with a stiff brush until all the blood stains are removed.

As soon as the fish has lain long enough for all the blood to run off (it must be carefully observed that no bloody water remains in the belly), the fish is packed in the paper, which must be square in order to obtain the best packing, and each side at least one and one-half times the length of the fish.

To start with, the fish is placed crosswise at one corner of the paper, and wrapped up firmly. The two corners are bent in and wrapped up, and in the fourth corner tied with a piece of cord. The objection may be raised that this way of treating fish is too particular and takes too long, but the increased work and the increased expense will soon be offset by the higher price secured on account of the better preservation of the fish, and the intelligent fishmonger will soon discover the advantage of handling fish which, if not sold today, may be sold in 3, 4 or 8 days and still be equally good and fresh.

It is not yet proved that all kinds of fish are equally adopted to packing in this manner; it may not pay, either, to pack all kinds of fish, but the better kinds of fish, like sole, turbot, kitt, halibut, cod, plaice and haddock, would bring better prices if treated in this way. Fresh-water fish like salmon, carps and zanders, which are to be transported in a few days would have a different appearance at the end of the journey if packed in the paper.

The main point is that the fish must be cut, the bowels and the gills removed, and the fish well cleaned if it is to be sent long distances. From various experiments it is claimed that fish packed according to this method will keep fresh for a long time and make a far healthier and better product than when kept in direct touch with the ice. The paper is manufactured in England.



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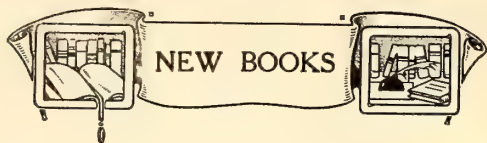
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NEW BOOKS

INDIAN INSECT LIFE. By H. Maxwell-Lefroy, M.A., F.E.S., F.Z.S., assisted by F. M. Howlett, B.A., F.E.S. Calcutta and Simla: Thacker, Spink & Co. London: W. Thacker & Co., 1909. 4to; 786 pp.

This is a manual of the insects of the plains of tropical India. It is beautifully illustrated, and is a rather remarkable production to be printed in Calcutta. The subject is rather a special one, and we do not feel competent to pass an opinion on it. The work seems to be a thoroughly scientific one, and the plates are certainly very creditable. They are numerous and well executed.

PRACTICAL HOUSE FRAMING. By Albert Fair. New York: Industrial Book Company, 1909. 108 pp.; 98 illustrations; 12mo. Price, 50 cents.

The series of articles on house framing was recently published in *The Practical Carpenter*. Mr. Fair, the author of these articles, has prepared them in the form of a practical text book for beginners and a reliable guide for journeymen. It takes up the subject of braced frame construction, containing many useful hints and suggestions on these forms of house framing.

HOME DECORATION, 1909. Philadelphia, Pa.: The Penn Publishing Company. By Dorothy Tuke Priestman. Cloth; illustrated; \$1 net.

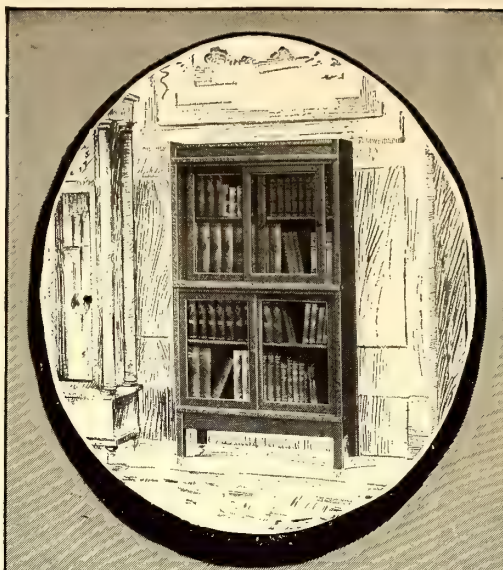
A wave of artistic appreciation is transforming American life, and the homemaker even of very modest means is expected to-day to know what is beautiful in color, form and texture, and how to buy and when to buy. This is a book that tells what is really simply good taste, why it is, and how to get it. It deals fully and practically with the treatment of walls, furniture, floor covering, hangings, ornaments and pictures. It gives color schemes, tells how to arrange doors and windows, how to make the most of small space, how to do stenciling, how to make rugs, and many other useful suggestions. This book will be of interest to anyone who takes a pride in making a healthful, beautiful and well-organized home.

OBERAMMERGAU AND THE PASSION PLAY. By Rev. E. Hermitage Day, D.D., F.S.A. Milwaukee: The Young Churchman Company, 1910. 24mo.; 96 pp. Price, 70 cents postpaid.

This is a practical and historical handbook for visitors, and deals with the story of the Passion Play, the spirit of the Passion Play, the approach to Oberammergau, the village of Oberammergau, the structure of the Passion Play and synopsis of the Play, the origin of religious drama, notes on music, books on the Passion Play, dates of the Passion Play, and cast of the Passion Play. It is a very complete little book, just right to slip in the pocket. It should be in the hands of all those who are thinking of visiting this great play.

THE NEW BUILDING ESTIMATOR. By William Arthur. New York: The David Williams Company, 1910. 16mo.; 477 pp. Price, \$2.50.

This is a practical guide to estimating the cost of labor and materials in building construction from excavation to finish, with various practical examples of work pre-



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sented in detail and with labor figured generally in hours and quantities. It is a handbook for architects, builders, contractors, appraisers, superintendents, and draftsmen. This book, which is now in its third edition, has stood the test of time admirably. It gives the approximate price and the various methods of computing the cost of building materials of all kinds. The compilation of a book of this nature is particularly difficult, and the author is to be congratulated on such a creditable production. The only criticism that could be made on it is, that the somber binding is accentuated by a funeral brown edge, which is not at all handsome, although it undoubtedly prevents the edges from looking dirty after use.

ESTIMATING FRAME AND BRICK HOUSES, BARNs, STABLES, AND OUT-BUILDINGS. By Fred. T. Hodgson. New York: David Williams Company, 1910. 16mo.; 252 pp. Price, \$1.

This useful little work contains a detail estimate of a \$5,000 house and additions; each room is taken up by itself, instructions are also given as to estimating by cubing, by the square of floors or walls, and by the process of comparison, with hints and practical suggestions for taking measurements and making tenders for work. The present volume is the eighth edition, which is an excellent guarantee of the reception which the book has received.

THE SHIP-DWELLERS. By Albert Bigelow Paine. New York: Harper & Brothers, 1910. 12mo.; 394 pp. Price, \$1.50 net.

The account of a Mediterranean voyage touching many countries, and full of descriptive color, but relying most for its excellence upon the many-sidedness of its author's alert and sensitive mind, and upon his unfailing humor. By way of beginning, Mr. Paine describes the influence exerted upon his boyish imagination by Mark Twain's "Innocents Abroad," and how his mind dwelt especially on that illustration in the book which showed the outward-bound "Innocents" on the deck of the "Quaker City." When he grew up, and knew that such voyages were really possible, he prepared for a pilgrimage to Mediterranean lands.

ELEMENTARY COURSE IN PERSPECTIVE. By Sherman M. Turrill, C. E. New York: D. Van Nostrand Company, 1910. 12mo.; 71 pp. Price, \$1.25 net.

The author has endeavored to illustrate the mechanical application of principles of descriptive geometry to the making of a perspective drawing. Two methods are used; first, the method by use of the plan, where the orthographic projections of rays are used, and the method by scale. It is assumed that the student is more or less familiar with descriptive geometry. The subjects taken have been selected with a view toward illustrating important principles and for their general interest. There are sixteen illustrations and folding plates.

HICKS' BUILDERS' GUIDE. For Carpenters, Contractors, and Builders. Revised and enlarged by I. P. Hicks. New York: David Williams Company, 1910. 12mo.; 166 pp. Price, \$1.

This valuable book comprises a practical system of estimating material and labor. Twenty thousand copies have been sold, and it is one of the best-known builders' guides, of which so many are being issued at the present time. In fact, one publisher has sent three to the reviewer's table in one package.

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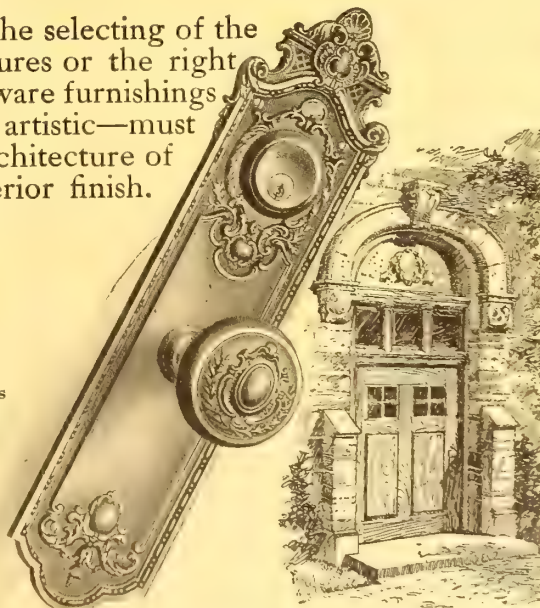
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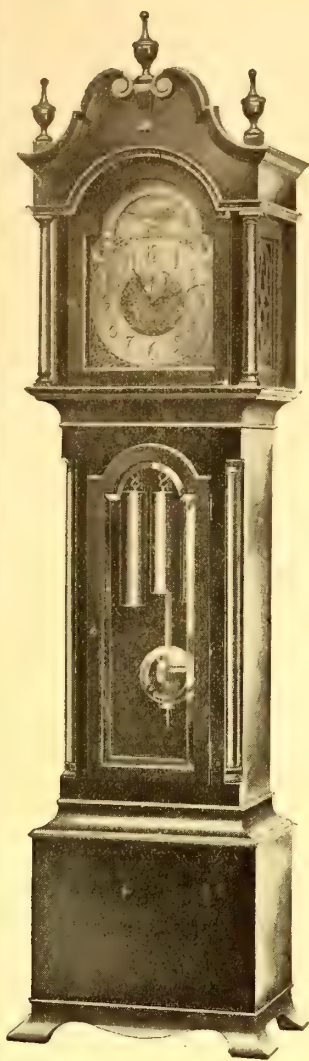
AMERICAN HOMES_{AND} GARDENS



NOV., 1910
Vol. VII., No. 11

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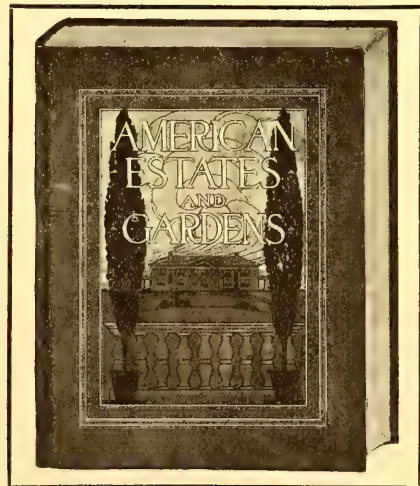
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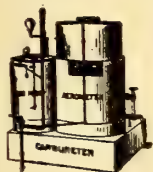
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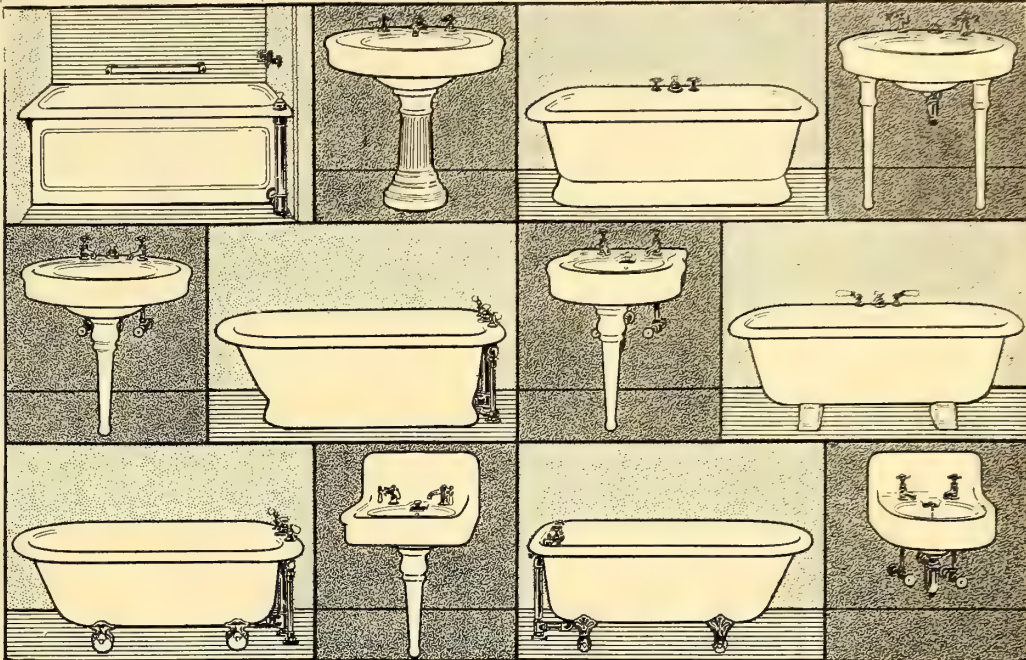
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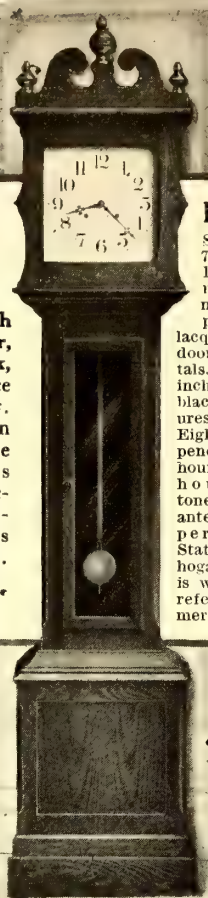
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MAKING YOUR OWN PERFUMERY

BY A. S. ATKINSON.

THE manufacture of perfumery has always seemed a difficult process to many, and without doubt the blending of certain kinds of perfumes is a matter of much scientific and skillful manipulation; but on the other hand, the most commonly used perfumes can be made at home with simple apparatus and without much expense or trouble. In many parts of the country, flowers are so abundant that one can harvest all that are needed for manufacturing at home perfumes enough for a year's use.

A perfume garden should prove as profitable as one of fruits or vegetables. We plant gardens for cut flowers and for flower seeds, but few raise flowers for perfume making. Enough perfumery is sold in this country annually to make a yearly tax of nearly ten dollars on every family. This amount is not evenly distributed; but each woman spends enough to make it worth while, if she has the garden space, to try a hand at making her perfumes at home.

One must devote time to the cultivation of certain flowers, which thrive luxuriantly in the vicinity. In many parts of the country roses thrive so luxuriantly that fields can be sown with them, and an abundant crop raised. In other sections the rose is too slow-growing for this purpose, but the violet takes its place. Again, it must be the jasmine, the tuberose, the orange blossom, or lavender. Whatever flower it is that thrives and possesses delicate but powerful fragrance, should be chosen for the work.

Direct distillation is the most satisfactory way of making perfumery. The still is a simple affair, and it can be made out of articles found in the average home. Take an ordinary tin oil can, scour it, and purify it of all oil odors. Stop the spout completely, and fit a cork in the top, through which the oil is poured. From a hardware store get four feet of copper tubing (tin or galvanized iron pipe may also be used). The tube should be bent downward at the ends.

The tin can should be filled with a pound of flower petals gathered fresh in the early morning. Pour over these petals eight fluid ounces of alcohol. Then put the can in a saucepan half filled with water, and place on a stove, where the water can be kept at the boiling point. A hole should be cut through the cork of the can just large enough to receive the metal tube. Place a quart jar on a table nearby, and insert in it the other end of the tubing. This jar should not be sealed, or distillation will not go on properly.


When the water boils, the alcohol in the can is heated, and this process extracts the perfume from the flower petals, and gradually causes distillation through the tube into the cold jar on the table. The alcohol thus distilled will carry with it the true attar of the flowers. Alcohol has a peculiar property of extracting and holding the scent of flowers. As fast as distillation goes on, the contents of the jar should be emptied into glass bottles, and securely corked and sealed with paraffin. In blending perfumes of several flowers, do the mixing after each one has been distilled separately. Do not mix the flowers in one still.

Another method of using this still is to employ water instead of alcohol for distillation. Instead of attar we get the essential oil of the flowers, and this rises and floats on the surface of the water in small globules, which must be skimmed off carefully, and immediately bottled and kept cool and air tight. When sufficient oil is obtained, it should be mixed with alcohol

THE WEALTH

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to retain the odor indefinitely. One may distill with water any number of kinds of flowers, and with the essential oil properly bottled, blended perfumes can then be made. A few drops of several kinds of oil are poured into a bottle containing a certain amount of alcohol, and when shaken thoroughly one has a delicious fragrance for home use. For instance, eau de cologne is made by pouring into a glass bottle a pint of alcohol, and adding half a drachm of homemade attar of rosemary and twenty drops each of the attar of orange peel, lemon peel, and bergamot peel. The distillation of these fruit peels is another desirable home industry. Cut up fresh orange or lemon peel and place it in water in the tin can, and heat as for use in flower leaves. The essential oil of these peels will then be gradually distilled into the other receptacle. Skim off the globules, and confine in corked bottles.

Besides distillation, we have the process of absorption, which anyone can do at home with little trouble and expense. It is slightly more complicated, but it will extract the perfume of more delicate flowers, such as the violets, with greater success. This process consists of covering two large shallow pans or soup plates with a layer of melted suet. The layer should be half an inch or more thick. When the fat has hardened, gather the violets, jasmine, or tuberoses flowers, and cover the suet thickly with them. Then place one plate over the other, and force down firmly. Wrap the plates tightly in paper, so that the perfume will all be retained. In twenty-four hours the suet will have absorbed nearly all the perfume. Then quickly remove the dead petals, and replace with more fresh ones. Repeat this operation for several days or even for a week, so as to secure a strong supply of odors. When enough petals have been robbed of their odor, remove the top plate and cut the suet into small pieces, and drop them into a wide-mouthed bottle or glass jar containing alcohol. The transference should be made as quickly as possible, and with least exposure to the air. Then close the bottle or jar, and seal with paraffin to make air tight. As the suet absorbed the fragrance of the petals, so will the alcohol rob the suet of its concentrated extract. Every day the bottle should be shaken a little, and in a fortnight the alcohol should be poured off through a strainer into bottles and corked.

Besides making the liquid perfumes, one should consider sachet powders and perfumed pastes. These have their use in every household. A rose paste is made by steeping rose leaves in water and pounding with a mortar until reduced to a paste. This maceration should be thorough, and can be done with an ordinary rolling pin. Now add a drop or two of your home-made attar of rose, and permit the paste to dry in an air-tight receptacle. The paste will grow quite hard, and can then be cut into any shape desired. A piece placed in a drawer will scent the place for a long time. If the pieces not in use are kept air-tight they will retain fragrance indefinitely, and will always be ready for instant use. Laid in linen and clothes presses, they add that subtle fragrance to the fabrics which so many like.

Sachet powders are as numerous and as varied in fragrance as colognes. One may compound them out of flower petals, spices, and perfumes to suit individual preferences. The art of making sachets is very simple and inexpensive. If we add to these attars and essential oils such simple articles, purchasable at any drug store, as iris root, musk, and cochineal (the last for coloring only), and such spices as cloves, cinnamon,

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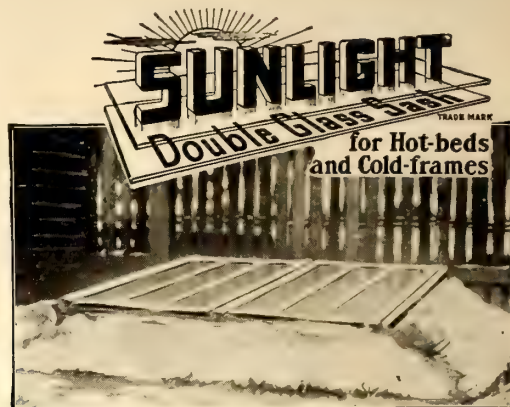
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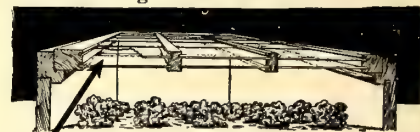
UNLESS remedial measures are taken, it is possible that the famous leaning tower of Pisa may ultimately collapse as did the Campanile at Venice a few years ago. Measurements taken by an English engineer in 1829 showed the tower to be 15½ feet out of the perpendicular. Measurements taken recently show that the divergence has increased to 16½ feet. It should be within the resources of modern engineering to excavate below the tower, bring it gradually back to the vertical, and place beneath it an absolutely secure foundation.



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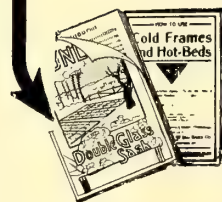
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THE CITY BEAUTIFUL

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Therefore we welcome as all lovers of their country should the effort of the Municipal Art Society of this city to bring about co-ordination among those important interests which are concerned in a large way with the laying out of urban and suburban property, and the construction of the more important city buildings.

The failure of New York city, and most of the larger cities of the United States, to present to view those open plazas and spacious boulevards surrounded or flanked by municipal buildings of dignity, and so placed as to present a harmonious architectural combination, is not due to any lack of enterprise or want of capital for construction, but rather, and we might say almost entirely, to want of foresight, and the failure on the part of the municipal authorities, at least in the earlier days, to pay any attention whatsoever to the question of the future architectural and aesthetic appearance of the city.

Such important structures as railroad terminals, steamship and ferry docks and landings, and bridges for spanning our great rivers, to say nothing of imposing municipal buildings, should always be planned with reference, not merely to their utilitarian purposes, but to their architectural fitness as related to the site on which they are built, and the character of the architecture by which they are, or in the future are likely to be, surrounded. The principal cause of the lack of beauty in our cities is to be found in the want of any such co-ordination and supervision in the years gone by. Almost invariably there has been too much individualism, and streets have been laid out and buildings erected according to the passing mood or whim of the city department or the supervising architect in charge. Hence that distressing lack of harmony which completely robs of its charm a street, a public square, or a collection of civic and commercial buildings which, had they been grouped on a well-ordered plan, would have possessed sufficient dignity and beauty to place them in rank with some of the finest and best districts in the older European cities.

The Municipal Art Society has communicated with the leading railroad interests and the commissioners of the tene-

ment house, dock, and other city departments having control of municipal buildings, and has requested their advice in drawing up a revised city plan which shall modify, as far as possible, present defects, and make provision for careful regulation in the future. Although we cannot pull down our cities to rebuild them upon a more wisely ordered plan, we can, at least, make sure that in future extensions or rebuildings the laws of harmony shall be considered. At the present time, hundreds of millions of dollars are being expended in New York alone upon construction, and it is the aim of the Society to so direct this expenditure in regard to the aesthetic and architectural effects produced, as to develop, in the course of time, a practical, comprehensive, and ideal plan for the city of New York. To this end, they will shortly issue a map of the new city as proposed, which will be scattered broadcast and posted in all public places. "The City Beautiful" does not only apply to New York city, but it is also applicable to every city in these United States, and the subject is worthy of consideration of all citizens of our commonwealth.

The strong public sentiment in this direction and the civic pride which is now being developed throughout the country is no doubt the result of the stimulus given to it by such literature as that of the *AMERICAN HOMES AND GARDENS*, the municipal art societies of the larger cities, and the village improvement societies of the smaller towns and villages.

We heartily commend this movement to the attention of the citizens, not only of New York itself, but of every one of those great civic centers which the recent Federal census has shown to be having such phenomenal growth.

TO OUR READERS

The Editor cordially invites the co-operation of the readers of *AMERICAN HOMES AND GARDENS* in making it the best and most useful journal of its kind. Every reader is requested to communicate with the Editor, telling him what you like about it, why you like it, and how it can be made more helpful to you. Tell him of your needs, for he wants you to consider that this paper is yours, and by so expressing your opinion you may feel that it can be made better and that you not only help yourself, but you also can do an excellent work in helping your fellow readers.

The aim of the Editor has always been to assist his readers in better building, decorating and furnishing, and in improving the grounds about the home. He seeks to interest the architect, the builder, the house owner, the home maker, and the real estate promoter.

New ideas are being continually introduced, but your ideas can be a guide in bringing this paper up to the highest possible standard in order to meet the requirements of its readers.



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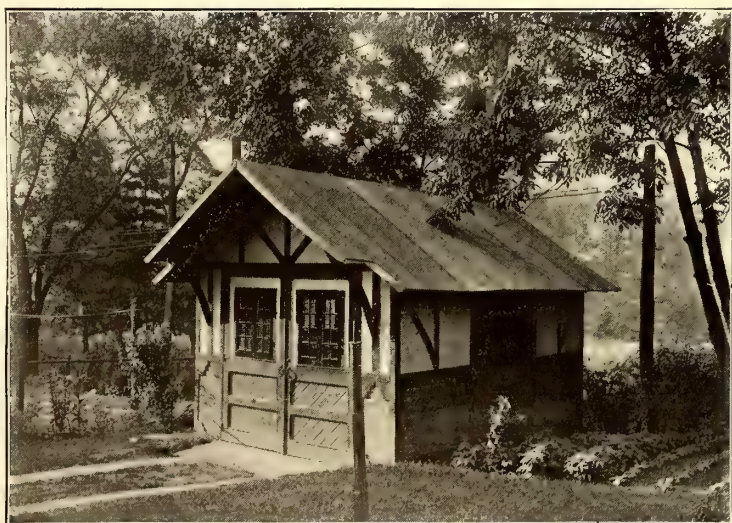
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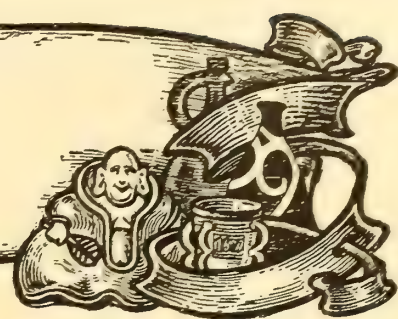
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American Homes and Gardens for December



A Country House

The opening article for this issue is the country house built for Howard Henry, Esq., at Camp Hill, Pa., from the designs of the well-known architect, Wilson Eyre, of Philadelphia, Pa.

The house is a delightful one, and the charm of its design lies in the simple manner in which it is treated without any pretense to formality.

The estate is quite a large one, and while there is no formal garden there is a general garden effect produced by the judicious planting of shrubs and hedges about the property.

The house is illustrated by many fine engravings which are thoroughly described by Francis Durando Nichols.

The Art of Ornamental Orange Peeling

It is surprising how many artistic table decorations can be made from the rind of the Christmas fruit, the conventional orange, in the way of converting it into a table ornament. Harold J. Shepstone has prepared an article which is profusely illustrated, and which shows the many charming and delightful ornaments that can be created by the manipulation of the peel of this common fruit.

Ostrich Farming As An Industry

Newton Forest has prepared an excellent paper on Ostrich Farming as an Industry, which is illustrated by many fine engravings. Mr. Forest tells in a very concise way how the industry can be made to pay, and points out the important features in the development of an undertaking of this kind.

Leather Craftwork

Miss Catharine A. Jensen has prepared an article on the making of leather bookmarks, and penwipers. Miss Jensen has chosen these two subjects to illustrate to beginners some suggestions for simple, effective and useful articles, pointing out the possibility of any one who has a feeling for design and color, to secure some beautiful results, after a little experience.

Crafts That Children Can Do

An illustrated article by Mabel Tuke Priestman forms one of the most interesting contributions to this number. It is one which shows by illustrations what a child can do in the making of straw hats, baskets, bags, etc. It used to be thought necessary for a child to show some natural talent for art, before it was allowed to be taught any special branch, but, happily, this idea has melted away, and we realize that everyone has some latent abilities which only need to be developed. Mrs. Priestman tells you all about this.

A Group of Houses of Moderate Cost

The small house is the most numerous erected building in the country, and the group of houses presented on a double page is representative of some of the best types of small houses being built.

Decorations and Furnishings for the Home

Miss Alice M. Kellogg presents her tenth paper on "Decorations and Furnishings for the Home," and has devoted it to the "Artistic Treatment of Fireplaces and Mantels." This is a very important subject, for the reason that a fireplace and a mantel are the principal ornaments of a room. Miss Kellogg tells of the kind of fireplace, the suitable mantel to be provided, and the appropriate ornaments to be placed upon it. A handsome room can be spoiled by the injudicious treatment of these important features, and Miss Kellogg tells in a very happy way how this can be avoided.

Cacti That Will Flower

Of late years there has been a tremendous stimulus given to the cultivation of Cacti, owing to a wider knowledge of the nature of these plants. S. Leonard Bastin has prepared a paper pointing out the reason why the Cacti are now being more widely cultivated.

Old South Salem

A paper on the restoration of a Colonial village (South Salem), by Theodore Langdon Van Norden, forms an interesting subject for this number. It is a historical sketch of the village from the time it was occupied by Chief Catoonah and his tribe, until the interesting period after it became inhabited by the white man. For many years the village struggled along in its isolated quietude, until some few years ago a gentleman, with philanthropic impulses, devised the idea of restoring it to its original beauty, and the progress made in this direction is only partly shown by the engravings with which this excellent article is illustrated.

Houses Costing Less Than \$2,500

Among the many houses illustrated in this issue is one which cost \$2,100, another costing \$2,400, and a third, \$2,500, complete. Each of the houses are of excellent design, and has plans which is well arranged for comfort and convenience.

Paul Thurston has prepared an illustrated paper on the subject.

A House and a Garage

An unusual feature of this subject, which has been prepared by Robert Prescott, is the combination of a garage with a house. The result is very satisfactory, and the study of the subject should be of interest to anyone who has an embankment or a side of a hill on which to build.

Six Neglected Fruit Trees

There are half a dozen fruit trees in the United States capable of general cultivation, and to which much more attention should be given. E. P. Powell has prepared an interesting paper on this subject and it is worthy of consideration.



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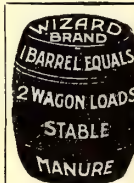
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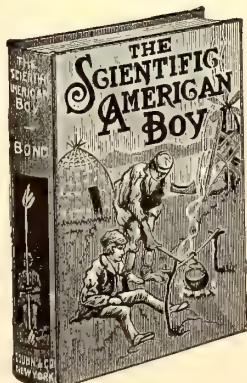
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CONTENTS FOR NOVEMBER, 1910

TROUT FISHING	<i>Frontispiece</i>
"INDIAN RIDGE"—The Summer Home of Dr. F. B. Harrington, at Ipswich, Mass., <i>By Barr Ferree</i>	415
DECORATIONS AND FURNISHINGS FOR THE HOME—IX. Furnishing a Young Girl's Room, <i>By Alice M. Kellogg</i>	420
ENGLISH GARDEN MAZES	<i>By A. Jennings Brown</i> 423
A GROUP OF NEW ENGLAND HOMES	426-427
HANDICRAFTSMAN—Home-made Pottery	<i>By W. P. Jervis</i> 428
GLUE FOR MODEL MAKING	429
THE STEAM RADIATOR IN FRANCE	<i>By Frances B. Sheaffer</i> 430
RESIDENCE OF WILLIAM L. BAILEY, ESQ., AT ARDMORE, PA.	<i>By Paul Thurston</i> 431
THE MIRROR	<i>By Esther Singleton</i> 435
THE WASP'S YEAR	<i>By Harold Bastin</i> 438
STUCCO HOUSES OF DISTINCTION	<i>By Burr Bartram</i> 442
THE CITY OF THE SUN	<i>By Peter Roveda</i> 447
GARDEN NOTES—Tennis Courts	<i>By Charles Downing Lay</i> 448
CONSERVATORY AND GREENHOUSE HEATING.....	<i>By George E. Walsh</i> 450
GLASS ESPALIER WALLS	<i>By Jacques Boyer</i> 452

The Editor's Note Book

Correspondence

American Homes and Gardens for December

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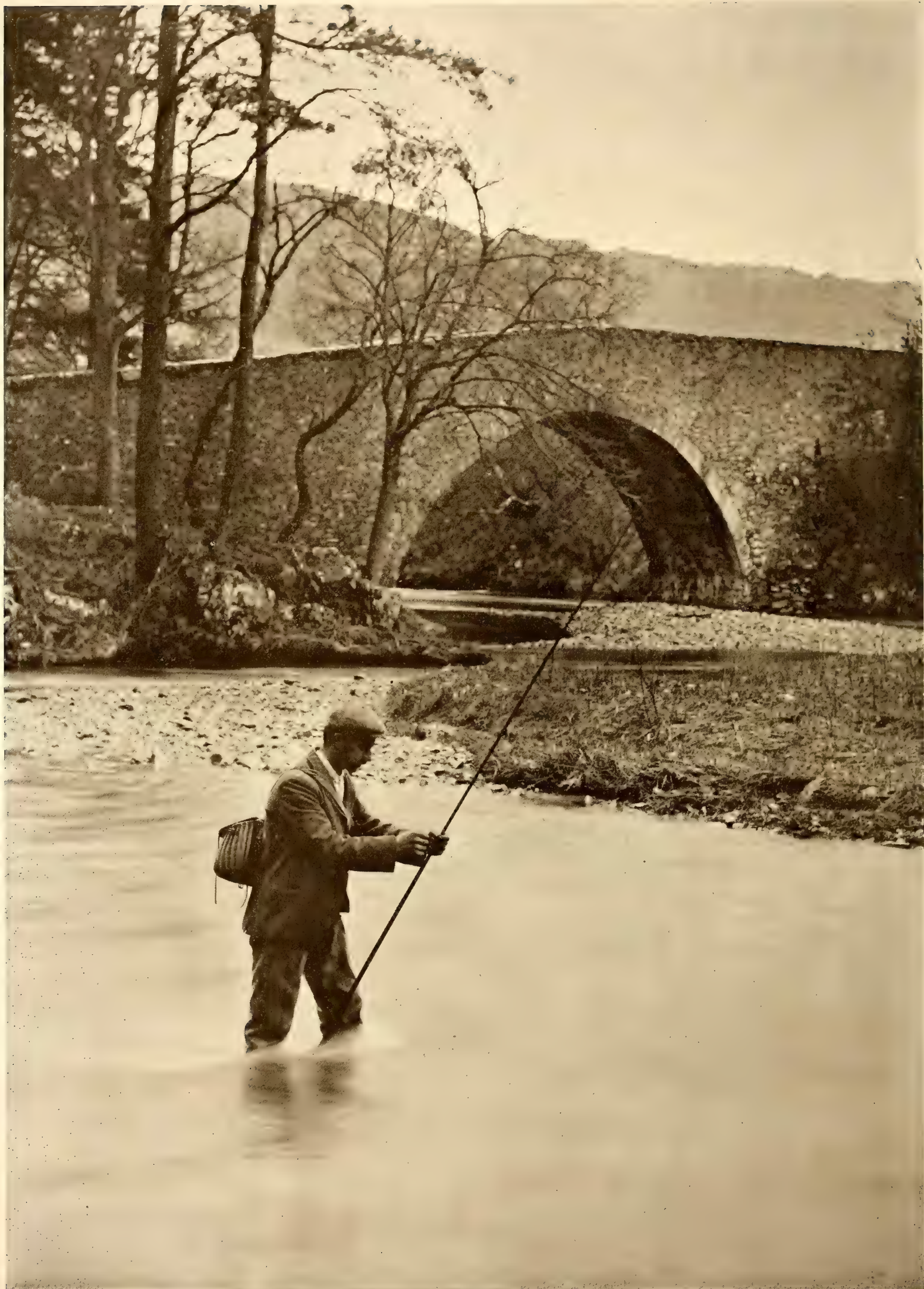
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Trout fishing

AMERICAN HOMES AND GARDENS



Volume VII November, 1910 Number 11

“Indian Ridge”

The Summer Home of Dr. F. B. Harrington, at Ipswich, Mass.

By Barr Ferree



BROAD drive of a thousand feet or so forms the approach up hill to the immense circle before the entrance steps of Dr. F. B. Harrington's summer home at Ipswich. Bordered with lawns on either side, with banks of shrubbery beyond, it forms a very agreeable entrance to a delightful and charming house. Almost a-top a hill, the house enjoys a fine view over the surrounding country, which to those who know it and love it includes some of the most picturesque scenery in Massachusetts. It is a country that invites the picturesque in architectural design, and Messrs. Clark and Russell, architects, of Boston, and Mr. Arthur

A. Shurtleff, landscape architect of the same city, have between them created a residence and an estate of marked interest and beauty.

The house is a many-gabled rambling structure, as delightfully picturesque in every part as it is picturesquely placed. So completely is this note the dominant one that it is scarcely apparent that here is a main building with a deflected wing—the deflection is clear enough, but the opposite wing, which is a portion of the main building, is so cleverly varied that the entrance front seems to consist of a two-gabled center with related subsidiary structures on either side. One need not, however, concern oneself with questions of regularity and symmetry in this very pictur-



The entrance front of the house shows a many-gabled rambling structure



One of the many porches attached to the house

esque grouping. No problems of this sort presented themselves to the architects who, indeed, burdened themselves with very much the more difficult task of creating harmony out of diversity and of bringing unity out of variety. The very great success that has crowned their work is more than ample justification for the style chosen for this house, which is thoroughly charming in every aspect.

The two chief features of the entrance front are the main gables, with their projecting roofs and vergeboards. The larger of these is at the extreme left of the main building; the smaller, which is projected further forward, surmounts the entrance porch. This last is the simplest of all entrances porches—a platform reached by a flight of stone steps with a column on either side that supports the projecting portion above it, here brought out flush with the beam above the columns, and recessed within for greater floor space for the porch. The walls here, as elsewhere, are without ornamentation, and present only the light gray of the stucco with which they are built. The outside wood-work, it should be added, is stained dark gray.

On each side of the porch is a large bowed window, having the plan of a segment of a circle. On the right this immediately adjoins the porch; on the left it is separated from it by a flat piece of wall yielding space for a twin window. Beyond on the right, is a great stone chimney of irregular design built of field stone, and beyond the end wall is the porch, which completely encloses this end of the house, and which is returned on the garden front within.

The second story overhangs the first to a more or less degree, the extent of the projection varying according to the projection of the various parts of the first story. Over the entrance porch is a little projecting bay window sup-



The bowling green forms a passage from the house to the garden

ported on brackets. Under the large gable on the left, is a triple window; on the right the bowed window below is surmounted with a curved pediment that rises above the base of the main roof as a dormer. This device is repeated in the end beyond the great chimney, and is one of the most picturesque and successful features of the whole front. The beams above this floor are exposed in the main gables, but the larger one alone contains a window in its apex.

The deflected wing, which is obviously the service wing, and which has its own separate approach from the main highway, quite distinct from the entrance driveway to the house, is designed in quiet harmony with the main portion. It is simpler and less varied, with a pair of twin gables in the center; plainly finished without competition with the main gables.

A description of this front, which was limited to a rehearsal of its constituent parts, would be quite incomplete without a final word on the very admirable way in which all these parts are harmonized and unified. This has already been alluded to; but, after analysis, it becomes the clearer, since while there is variety and change in almost every portion, there is nothing that is not in perfect harmony, nothing that does not bear a relation to every other part. It is, in short, not only a most interesting study in the picturesque, but a highly successful realization of this very difficult architectural quality. The quiet colors of the house, which have already been noted, save that of the roof, which is pale reddish brown, have been very admirably chosen for this design. Nor should the planting around the walls be overlooked, the shrubs and bushes at their base, the vines on the porch columns, on the great chimney and elsewhere—all



Stone steps lead to a simple porch at the entrance



The garden at the rear of the house

these add immensely in the creating of the picturesque ensemble which is the keynote of the whole work, and which was the end looked forward to from the very beginning.

The modest entrance door that opens from the little front porch, admits immediately to the hall. This is the central apartment of the house and one of the most important; the living-room opens from it on the right and the



The staircase in the hall

dining-room on the left. Directly in face, as it is entered, are the stairs to the second story, rising with double platforms, one of which is directly above the garden door. The walls are finished throughout with cypress, stained the color of weathered oak, and arranged in long vertical panels that reach from floor to ceiling. The floor is laid with hardwood, on which are spread numerous beautiful Oriental rugs, and the ceiling has exposed beams, yielding large



The living-room from another point of view



The living-room

square panels that are plastered in light buff. The fireplace is on the left, and adjoins the doorway to the dining-room; it is built of common red brick, with wide black joints, and has a tiled hearth; facing, lining and chimney breast are all alike of this material. The room has small electric lights in the ceiling as well as side lights against the walls.

The dining-room repeats the woodwork scheme of the hall, but is relieved by a brilliant frieze of peacock pattern on a white ground. Both floor and ceiling are treated in the same manner as the hall, but the rug, furniture, and



The fireplace in the hall

window draperies, as well as the shape and destination of the room, give it an intense individuality of its own. It is lighted from the two ends, with the bay window on the front and three smaller windows on the opposite end. The design and material of the fireplace are similar to those of the fireplace in the hall.

Beyond is the very extensive series of the service-rooms, consisting of the butler's pantry, kitchen, refrigerator room, servants-hall and back stairs to the second floor. A rear porch is open only on the garden side and immediately

overlooks the tennis court. Adjoining is the spacious clothes yard, enclosed with a high fence, with vertical members only, and large cement piers, surmounted with balls. Every convenience that modern skill suggests for this portion of the house is here supplied in liberal sufficiency.

As in most country houses the living-room is the most important of the house. It is a vast and cheerful apartment three or four steps below the other portions, and is lighted by windows on three sides, windows of various shapes and sizes that bring into the interior of the house the delightful picturesqueness which is so marked a quality of the exterior. There are no completely paneled walls here, and no beamed ceiling. The woodwork is Japanese Cedar, with a paneled dado of



A glimpse of the garden through the pergola

perhaps three feet in height above which the walls are plastered and covered with gray grass cloth. A narrow wood band at the summit forms the cornice. The ceiling is finished as a solid sheet of plaster, broken over by the dependent electric lights.

The fireplace is of gray brick, with a paneled overmantel finished as a couple of cupboards. The inner window curtains which hang over thin white curtains, are of gray green. The furniture, for the most part, has cushions in shades of gray corduroy.

The second floor is, of course, given up to sleeping quarters. Space is provided for four bedrooms for the owner's use, and three bathrooms. In the service wing are three maids' bedrooms and a bathroom.



The dining-room is furnished in a handsome manner

Decorations and Furnishings for the Home

By Alice M. Kellogg

IX—Furnishing a Young Girl's Room



THE interest so conspicuously manifested by our younger generation in the home surroundings is naturally concentrated at its own room and belongings. Last month, in this department, some suggestive ideas were given for the room occupied by the boy of the family. A similar theme, but capable of more elastic treatment, is the furnishing of the daughter's apartment. Here it is often possible to perfect each detail for the refinement of daily living independently of the rest of the house.

The charm of absolute cleanliness for walls, floors, windows and general interior furnishings is never more desirable than in the young girl's room. Beginning at the foundation, the floor may be laid with strips of oak or maple and stained a deep mahogany red, dark oak or gray, as suits the color scheme to be carried out in the rest of the room. A word may also be said about painting a floor in a French gray, where the furnishings are light in tone, or an old-fashioned pumpkin yellow where the woodwork and walls will blend with so strong a note. Sometimes an opaque varnish is the only means for treating bare floors

that will not take a stain or a paint.

If an old floor cannot be left uncovered there are various styles of carpeting to be had. The most desirable selection at the least cost is a gray or a brown ingrain at ninety cents a yard, which, laid over a carpet lining, makes a pleasing background. Plain velvet carpets costing a dollar and seventy-five cents a yard are also useful for their quiet tones. Almost a plain effect can be had with the mottled Brussels carpet at a dollar and ten cents a yard, and the brown, blue or green fit into almost any colorings. In the finer grades of Brussels the new patterns are small and well-knit, some of them in chintz effects. The new borders are all narrow and make a finish to the edges of the floor.

If matting is preferred to keep down the expense, the plain white made in China is the most durable and, lacking pattern, makes a better under-covering for bright-hued rugs. The colored matting is best when used by itself, as its broken weave contributes enough design to the floor. In some places a dark-red matting looks better than one of colder tones, but always one must consider the general assembling of furnishings before committing oneself to a decision in this important item. Grass matting, successful as



Corner of a girl's studio

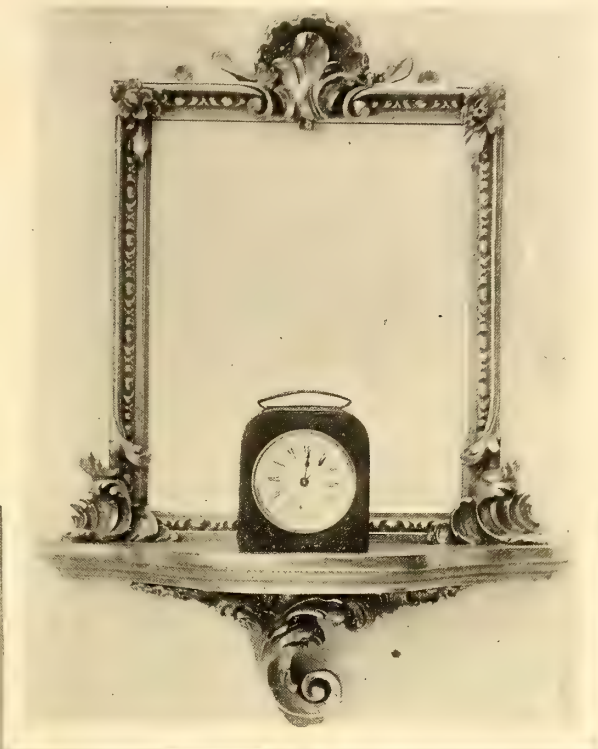


An attractive tea table

it is in contributing a soft green note to the floor, is harsh in texture for bedroom use and often emits an unpleasant odor when the room is not carefully and frequently aired.

With the question of a bare floor or one covered with matting comes its attendant query: What shall we have for rugs? In a young girl's room, color is almost a first consideration, and in almost every variety of rug this may be the primary motive for a choice. Sometimes the size of the rug is best when it nearly covers the floor, and nine feet wide by twelve feet

A clock shelf and mirror combined



light tones with lattice designs and flower borders, in perfect keeping with the ideals of a young girl's room. Some of the gray centers with pink and green tones in the borders at once suggest the daintiest color schemes for the curtains and other furnishings. Or, if a more decisive idea must be carried out, there are old blues, deep greens and fine shades of brown, with which the design is woven in contrasting colors.

In the Wilton rugs there has never been until this present season such well-balanced patterns and re-



A cane bedstead

long is a standard size for nearly every make. A favorite with many young girls for their own room is the cotton rug woven from strips of denim and cretonne, as it combines prettily with the pink or blue chambray wall papers with cut-out flower borders. (This will be taken up later.)

The Scotch rugs often mentioned in this department for their durability are now being made in



A portable sewing-screen



for a girl's room

finement of coloring, and one might almost forsake the Oriental for our own productions. The plain-colored, all-wool rug appeals to the girl who leans to the Arts and Crafts in her own furnishings, and builds up from a solid tone the minor details.

The usual way to plan the sizes of the rugs is to place the furniture as it is to be kept for some time and then lay a rug before the

larger pieces, such as the bedstead, bureau, washstand and work table or writing desk. Such a rule, however, must be controlled by the specific circumstances.

After the solution of the floor covering is finished, the next largest consideration is the wall decoration, and as this is quite a permanent feature its exactions are not to be disregarded. The style and finish of the woodwork, the shape of the room, the number of windows and doors, the amount of light and the direction from which it comes, the furniture and its coverings—all these enter into the choice of the wall paper, and makes it needful to secure some mature help in the matter.

Usually, the wall paper follows the favorite color of the occupant of the room—pink, lavender, primrose, or green—and with this plain tone is mingled others of a harmonizing character. While gray sounds rather sombre for the walls of a young girl, it nevertheless appears in such charming shades, with colored borders to add the touch of distinction, that it is a popular choice this season. Then, too, it affords the opportunity for vivid cretonnes at the windows and for the dressing of the bed.

The wall papers to imitate dimity, chambray and linen are very much liked when a border is to be added, as the surface is slightly broken up without becoming in any way a pattern. The newest borders are very narrow, and these are used to form panel effects on the four sides of the room.

Some years ago there originated the idea of adapting a striped paper as a border, cutting out the edges with a scissors, and then pasting it under the picture molding. So much was this amateur attempt liked that the manufacturing firms undertook to print borders that could be cut out by hand and used in the same way. Now, an electric needle does the work rapidly and inexpensively and every one may have a cut-out border at eight cents and upwards a yard.

In a room used more as a sitting-room than a bedroom the picture borders help to decorate the walls in a dignified manner. For the nature lover there are landscapes showing trees, brooks and mountains, and for the traveler there

are bits of Dutch and Swiss scenery. For the girl who prefers a more general color effect on her walls, the chintz paper is the most satisfactory, showing a variety of flowers in different colors, either scattered over the paper irregularly or strung together in upright lines. With a chintz paper one may keep to an almost severe treatment of the rest of the room, without a loss of interest.

As the window draperies are so closely allied to the wall coverings they bespeak the next attention. Here it is wise to bring in the element of contrast, and not, as so often is mistakenly done, repeat the pattern on the walls. For an example of the former way, one may cover the walls with a flowered paper showing pink roses with green leaves, and, at the windows, hang some plain pink crêpe or one of the novelty materials in the desired color. Or, one may use a plain pink paper on the walls and hang the



Window seats and bookshelves

windows with a rose cretonne.

A school girl, who took a few lessons in stenciling, copied the pattern of the flowered border on the walls of her room and applied it with tapestry paints to cream-white cheese cloth. This was hung in straight lengths at the windows, with a short valance across the center, completing the decoration of the room very successfully. For a long, low window this arrangement of a valance with side lengths is often the very best.



Window curtains with valance

In the large pieces of furniture, bed, bureau, divan and writing desk, a girl may not have the power to choose, and must often content herself with undesirable shapes and materials. In these days of the ready adaptability of material things to improved ideals in good taste, one may stain or paint a piece of furniture into harmonious relations with its fellow pieces, or even change its outlines and so amend its lack of artistic value. In one home

an old set of walnut bedroom furniture with aggressively prominent carving was first denuded, by the carpenter, of its superfluous portions and then painted with white enamel paint toned to a soft cream. Over this foundation some tiny rosebuds with green leaves were painted from a stenciled pattern, on such places as the head and footboard of

the bed, the drawers of the bureau and the backs of the chairs.

If a girl can start the furnishings of her room with a really good piece of antique furniture, well-made and of tasteful lines, it will set a standard that will be difficult to satisfy without adding more of the "real thing." A four-poster bedstead makes a picturesque element which seems incomplete without a low boy arranged as a dressing table, a high chest of drawers in place of a chiffonier, and a wing chair and candle stand. Where reproductions can be afforded there are old English models of most interesting types in mahogany and satin wood.

The white iron bed will always be in favor when a moderate-priced piece must be chosen. A new style this season shows the columns made in square outlines in place of the older way of round posts, with the elimination of the brass tops. This is especially recommended for the girl's room.

Bedsteads with the head and footboard fitted with cane give a lighter feeling to a room, especially when its size is contracted, than the solid panels of wood. In a country home this idea is even more appropriate for the summer life during warm weather than for the colder months spent in the city dwelling.

A divan is nowadays often preferred by many girls in the place of a bedstead to give the atmosphere of a sitting-room, and then its covering becomes a matter of vital importance. If the room lacks the charm of detailed ornament the cover could be of a figured material in a washable goods. Some of the cretonnes in tapestry designs are a

good choice in this line. Or, a printed linen in soft tones lends artistic interest. A row of back pillows filled with moss helps to furnish the divan, and also to serve as a brace for some smaller, less-weighty pillows.

If a plain covering is to be used the heavy homespuns are the best of materials, either with or without a band of trimming. With the plain cover some of the peacock chintzes made in France make picturesque pillow coverings.

A tea table is always longed for by the girl who has a room of her own, and however simple its make its appointments may become a collection always worth possessing, for teaspoons, decorated cups, dainty linen and a quaint teapot will somehow gravitate to those who are desirous of having them.

No more personal note can be brought into a girl's room than that imparted by a writing desk or table. Its equipment may be a matter of time, as with the tea things, but value is lent to the different pieces, if they are really of intrinsic worth, by their gradual accumulation, in much the same spirit that dwells with the collector.

A reading lamp or desk light must combine the real utilitarian principle with aesthetic charm to be a fit belonging in a girl's room. A piece of Japanese pottery may have an oil fount shaped to suit its opening, with a Japanese shade made of rice paper. Or, a candlestick of Florentine ware may be fitted with an electric bulb and carry a silk shade. In the illustration of a girl's studio an electric bulb is dropped from the ceiling by a cord and a brass shade made to outline a Dutch scene.

English Garden Mazes

By A. Jennings Brown



FEW old English gardens were considered complete without their mazes or labyrinths, which were usually masterpieces of the topiary art. The English garden maze is descended from the labyrinths of mythical times. It is hardly necessary to go into the history of these antique

mazes, or even the mazes of the medieval cathedrals which were sometimes an adjunct to the cathedral proper, or sometimes they were simply incised upon the pavement or walls. The idea which was aimed at was to fill a definite geometrical figure, such as a square or a circle, with path lines arranged as symmetrically as possible. In the ecclesiastical labyrinths, in some cases, 2,000 steps or more were required to follow the course on the tiles or slabs. They were frequently regarded as emblematical of the "Way of the Cross" from Jerusalem to Calvary. "With the revival of classical learning," says Country Life, "in the Fifteenth Century, the interest aroused in the ancient myths

led the draftsmen and engravers to apply the medieval labyrinths designs to the illustrations of such subjects as the famous legend of the Minotaur of Crete.

At the beginning of the Seventeenth Century mazes had reached the stage when from being nothing much more than curiosities of draftsmanship, they developed into garden ornaments of the most elaborate kind. By the end of the reign of Charles I the garden maze has probably approached its ultimate development, and the influence of Versailles was also felt for the wonderful labyrinth which Le Notre laid out could hardly be proved a most illuminating model. Unfortunately the Versailles labyrinth was

destroyed in 1775. One of the most interesting of the English masters and undoubtedly the one with which the general public are most familiar is the one at Hampton Court which was laid out in 1699 on the north of the palace. The general outlines are still well preserved and we give an illustration of it.

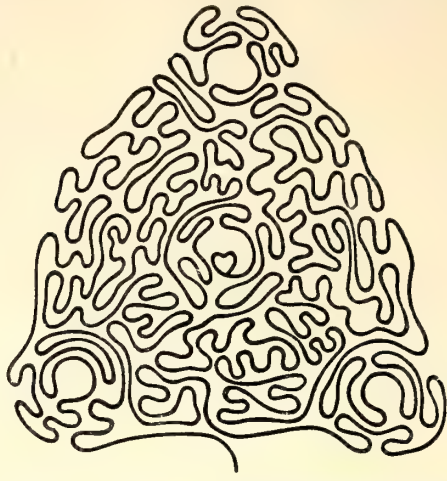
The Hampton court maze is comparatively simple as there are but three or four false



A maze in an English garden



Alkborough, Lincolnshire, 60 feet in diameter



Maze at Prinfern, near Blandford, Dorsetshire, now destroyed



Maze at Boughton Green, Northamptonshire, 37 feet in diameter

steps or methods to lose or perplex the rambler in his entering, whereas in some of the mazes there are twenty. The importance of Hampton Court naturally increases the interest in its maze. This garden labyrinth belongs to the

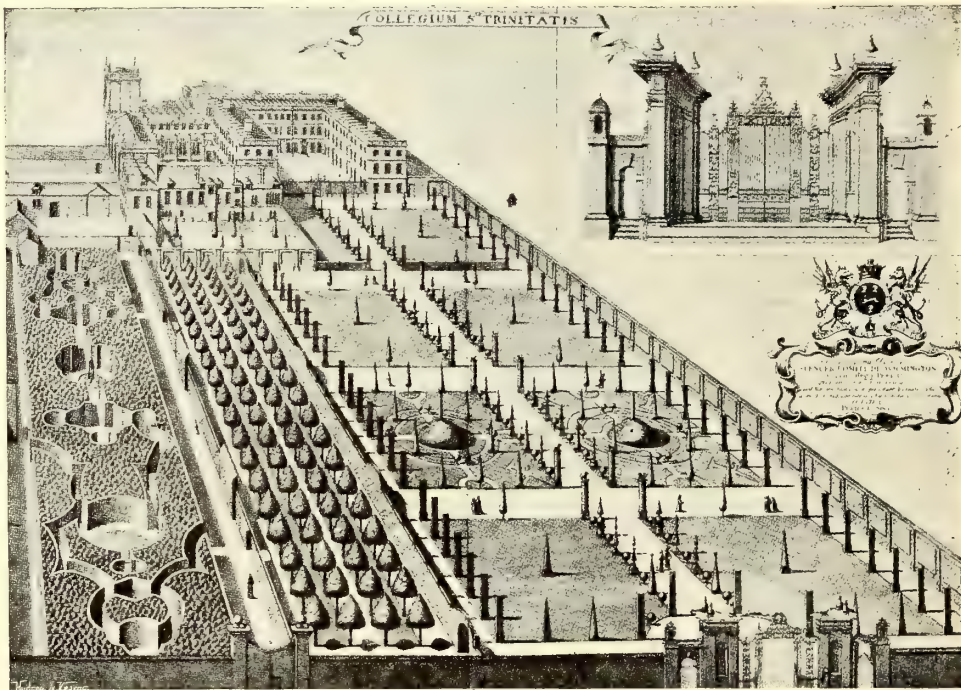
Palace; it occupies one-quarter of an acre of ground and is one of the most beautiful in England. Its age is known from the fact that it was constructed early in the reign of William III. The walks or alleys are about one-half mile in length. In time the vogue of the maze began to wane, just as the hedge has been lost to the alleys through age and neglect. An authority states, that original plantings die out and are replaced, so that the vegetation

is mixed by hollies, yews, hornbeam, etc. The maze at Hatfield House, which we also illustrate, shows the principle of the maze, the idea being to bewilder the would-be stroller. The maze was usually constructed, as in this instance, so that the actions of those in the maze

would amuse the people on the terrace. The construction of the maze is one of the most agreeable that remains. Indeed the essential feature of the maze outside of the emblematical and the legendary, is to construct a network

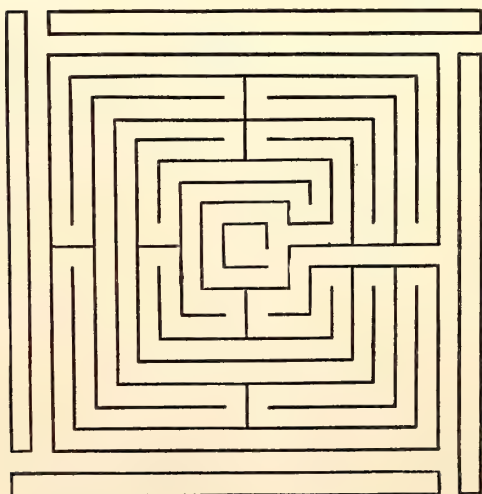
of hedge-ways at a certain height which bewilders seekers of its center, and which is equally confusing to them in negotiating its exit. This intention is shown by its introduction into pleasure resorts, where the younger visitors are amused and apt to be confounded. Generally in the center there is a fountain, a statue, or small trees.

The labyrinth at Theobald's Park, near Chestnut, in Hertfordshire, shows an entirely rectilinear form, which is not ap-

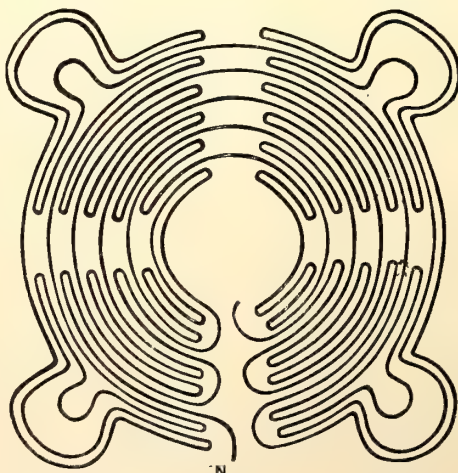


The maze, Trinity College, Oxford. From an old print

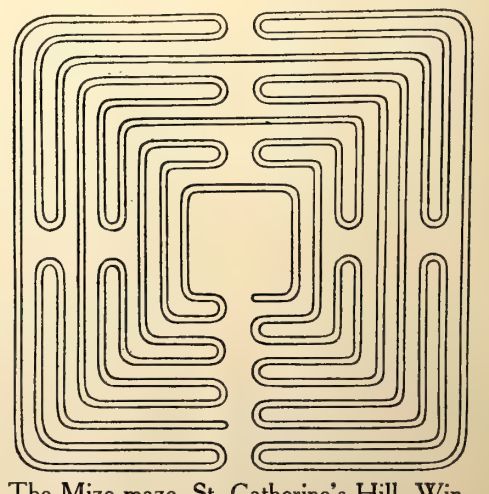
proached in any way by the numerous designs presented in this article. The nearest in type is that of the Mize maze, at St. Catherine's Hill. The Theobald maze is very old, as it was in the Park when it passed into the possession of James I. The octagonal form of the labyrinth adds



Maze at Theobalds, Hertfordshire



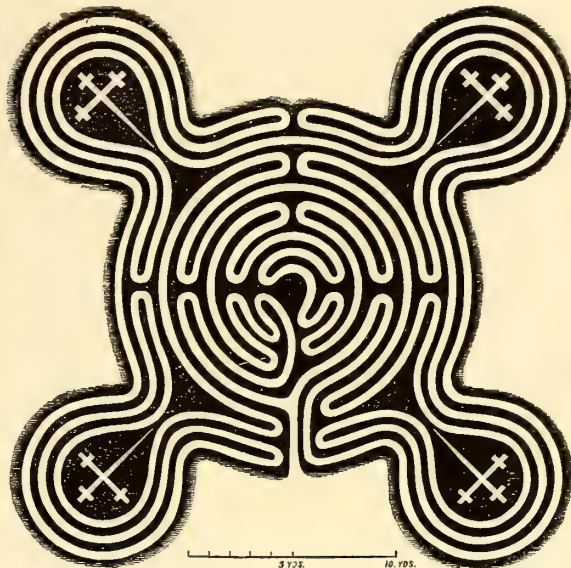
Saffron Walden, Essex, 110 feet in diameter



The Mize maze, St. Catherine's Hill, Winchester, 86 feet in diameter



Maze incised on one of the piers of the porch of Lucca Cathedral



Maze at Sneiton, Nottinghamshire, 51 feet in diameter



Maze at Wing, Rutlandshire, 40 feet in diameter

many difficulties and stops, owing to the numerous parallel hedges and paths. It is one of the most captivating of the

been given to the maze. In this class is included the one at Versailles.



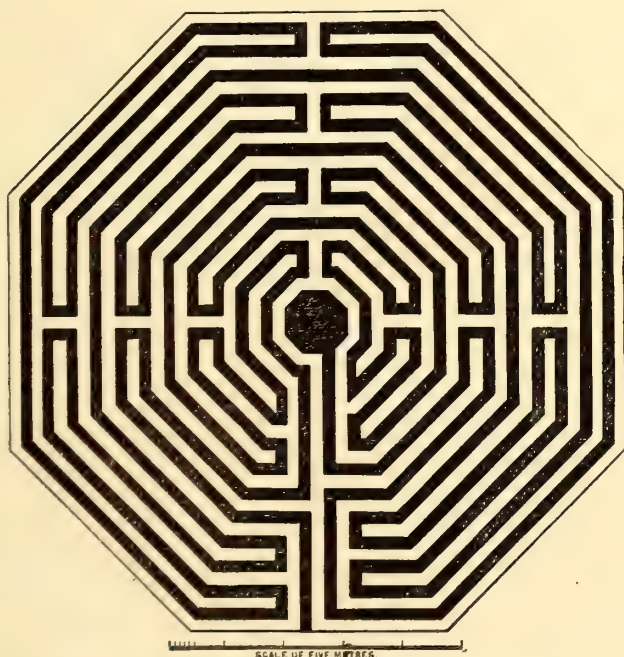
The maze at Hampton Court, England



The east garden and maze at Hatfield House

geometrical style of gardening, and is recommended for pleasure grounds. The name of "wildernesses" has also

The labyrinth plans and views shown give striking instances of design and artistic construction of a park, grounds or garden feature that it is safe to assume is not to receive much extension in the future. The chief interest on the maze, now, is to preserve those in existence.



Pavement maze, entrance of Parish Church, St. Quentin, 34½ feet in diameter



Maze at Chartres Cathedral on the pavement in the nave, 30 feet in diameter



Home of Mr. E. B. Stearns at Brookline, Mass.



The living-room in Mr. Stearns' house



The summer home of T. P. Hollander on Misery Island, Mass.



The living-room in Mr. Hollander's house



Mrs. Frances Robeson's house at Brookline, Mass.



The hall of Mrs. Robeson's house

A GROUP OF NEW



The dining-room in Mr. Stearns' house



The entrance front of Mr. Stearns' house



The dining-room of Mr. Hollander's house



West front of Mr. Hollander's house



The dining-room of Mrs. Robeson's house



The entrance front of Mrs. Robeson's house



HANDICRAFTSMAN

Conducted by A. Russell Bond

Home-made Pottery

By W. P. Jervis



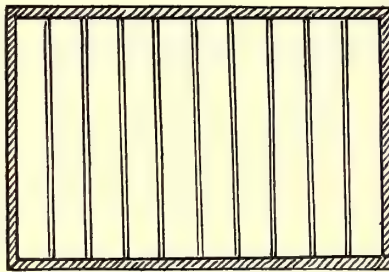
It may sound paradoxical, but the first point for the novice in the art of forming vessels of clay to consider is the last stage of the process. In other words it is necessary to know at what heat the clay you propose to use will mature in the firing.

This is the definite point which has always to be kept in view, both in the mixing of clays and glazes. There are several ways of acquiring this knowledge, (a) by purchasing clay from a pottery, (b) by adopting a formula or mixture the maturing point of which is given, and (c) by empirical trials.

We will presume you have access to a natural red or buff clay and want to find what degree of heat is necessary to convert it into serviceable pottery. Take some of this, dry it well and then pound it as fine as you like, picking out the stones and any other foreign substance it may contain. Scatter this into a pail of water, a handful at a time, until there is sufficient to make a fairly thick liquid. Stir this well until it attains a certain smoothness. But it will not be free from grit and it is necessary to pass it through a lawn of about 80 to 100 meshes to the inch. Take another pail, and taking a small quantity of slip at a time, pour it in the lawn and by either tapping it on the side, or using a sponge and keeping it in motion with the hand, the slip is freed from its impurities. Lard or butter tubs, obtainable from any grocer for a few cents, make excellent slip tubs. Let this slip stand a few hours. The clay particles will sink to the bottom, leaving clear water on the top. Pour off this water, stir the remainder well, place some of it on a plaster bat and you will soon have plastic clay. Before using this clay it must be "wedged,"

that is, kneaded together into a perfectly homogeneous mass, free from air bubbles. Take as much clay as you can conveniently handle; with a thin brass wire cut it in two, and then extending your arms, bring the two portions sharply together, repeating as often as necessary; or you can bring the mass down sharply and repeatedly on a stone or brick floor, cutting it with the wire as before. Clay cannot be wedged too thoroughly, so do not grudge the expenditure of a little time. The result should be a plastic mass which cuts cleanly without showing any holes or joints. Make a small slab, say 2x3 inches or 3x4 inches, of this clay, and carefully mark it out into ten

parts. This can be done with the edge of a rule. It makes it more exact if the slab is made a little larger, marked out as shown in the accompanying drawing, and when about as hard as leather, trimmed with a knife. The hatched parts show the parts to cut away. If the clay is too plastic it will take a long time to dry and possibly go out of shape. Whilst extreme plasticity is a good feature in a modeling clay, a potter's clay should be much "shorter," for it will then dry quickly and retain its shape. The best shortener is sand. Clay can be kept in condition by placing in a cool place and covering with a damp cloth. These natural clays mature at from 1030 to 1130 centigrade. Try it at 1070 (cone 04), and when it is fired touch it with the tongue and if it has not had sufficient fire it will adhere slightly to it. If it shows signs of vitrification and is dark and glassy it is overfired. I use a red clay which will not retain its shape at 1130 (cone 01), and to correct this I add 10 per cent. flint and 5 per cent. china clay, and this is the standard I shall use in these lessons. The flint renders the clay harder, but it also in-



Testing slab of clay

creases the shrinkage, this being about one-eighth from the mold to the fired ware. The china clay improves the color. So a slab made as above instead of measuring 2x3 or 3x4 is one-eighth less. This shrinkage is caused by the particles of clay being brought closer together during the firing and you cannot work without knowing what it is. When the clay is fired it is known as biscuit. A good hard biscuit is desirable, but it sometimes happens that the ware is short fired and the biscuit is

soft, and this will be dealt with later.

I have spoken of plaster bats. Plaster is a most important article to the potter and a number of these bats are

indispensable. They may either be round or square. To make the latter take a square of hard wood or thick glass of the size required and make a frame of wood or very strong cardboard, binding it firmly together with cord. A little clay at the joints will make it tight. A round one can be made in an agate or iron frying pan or pie plate. Measure how much water it takes to fill these to the required thickness, about $\frac{3}{4}$ -inch. Put this same quantity of water in a bowl or wide-mouthed



Rolling a coil of clay

pitcher and add to it one pound of dry dental plaster to each pint of water. Let this stand for about four or five minutes and in the meantime with a cloth or sponge soap all the inside parts of the mold, rubbing it well in so that

every part is covered and free from lumps. I have found that Castile soap boiled to a jelly and with a little kerosene oil added is the best medium to use. Stir the plaster vigorously with the hand until it is brought to a smooth cream and begins to thicken, and the hand on being withdrawn shows a good thick coating. Pour this mixture into your mold and in a few minutes the plaster becomes dry and in a few more the heat of combination sets in and the bat will part company from the mold if gently tapped. The edges can then be trimmed with a knife. As soon as the plaster is poured, wash out the vessel and your hands. The trimming knife is an ordinary ten-cent kitchen knife. The wire must be brass and any piece of wood will do for the handles. Those of parcel carriers do very well. Cones indicate the degree of heat in the kiln, first bending and then completely melting at the heat they indicate. Just before the end of firing for cone 1, 04 would be melted, 01 a little bent and 1 still upright. 04, 1070 C., is put in so that you may know the heat is even, or otherwise at back and front of kiln; 01, 1130 C., to warn you of the approach of the end, and No. 1, 1150 C., the heat desired.

Indian women made their pottery by building it up with coils of clay and this seems the principal method adopted by teachers and even art schools of to-day. There is absolutely nothing to recommend it from a potter's point of view except that it gives the tyro a certain familiarity with clay in its various degrees of consistency. A piece of good pottery is of even thickness throughout and correct in line. It is almost impossible to attain either conditions by coiling. It is waste of time and material and would be useless for you to follow these lessons unless you are thoroughly decided to make the best pottery you are capable of and are determined to use all the skill and intelligence you possess

to attain this end. It is comparatively easy to make good ware by both casting and throwing, which we shall deal with later, but while we have seen many interesting coiled pieces, we have yet to see a good one. Your first attempt at coiling should be an extremely simple shape. Make a full size drawing of this and do not let the fancy, born of a moment, tempt you to depart from it. The bottom of the piece should not be flat but concave. A turner would make you a few different-sized blocks for a trifling sum or you can take cardboard and cut out a number of discs, each

one a trifle smaller than the other and fasten together with a tack. Take a handful of clay and on a flat surface roll it out into a coil proportionate in thickness to the size of the piece you wish to make, from $\frac{1}{8}$ -inch to $\frac{3}{8}$ -inch diameter. A little practice will enable you to make these coils with some regularity. Having placed the base on a plaster bat, cover it with coils, and then commence to build the walls, breaking off the coil for each circle until the desired height is raised. Slightly dampen the under coil before adding another.



Building up a piece with coils of clay

Put aside until it has set firmly and then proceed to fill up the spaces between the coils with soft clay. Press this in with your fingers, moistening the coils as you proceed until the interstices both inside and out are filled up. Again let it harden and see if any cracks develop, and if so fill them up with the moist clay. It is now ready for finishing.

This can be done with a piece of flexible steel, which with a little practice adapts itself to the line of the piece, or a sharp knife can be used though not so effectively. A whirler facilitates very largely this finishing process. A cardboard template made from your drawing enables you to preserve the correct shape during both the coiling and finishing.

Glue for Model-Making



HERE are several grades of glue, the best of which is made from scraps of hides, and is translucent, of an amber color. As glue is indispensable to the amateur who makes models of paper, or of wood, or builds wooden furniture, it may be interesting to learn how to prepare it. Glue may be melted in a pot, set within a larger pot, water separating the two to prevent over-heating. Melting glue in this way about the house is objectionable, owing to its disagreeable odor. A liquid glue, however, may be made by adding acetic acid (strong vinegar will do), or a very small quantity of nitric acid, to its solution. Its property of adhesion is in nowise destroyed by this action. If vinegar is used, the glue may be dissolved in it for a fluid, instead of water.

A strong glue that is liquid, or gelatinous at will, may be made in small quantities, liquified and kept in an ordinary bottle. Take of good quality commercial glue, broken into small pieces, sufficient to fill a wide-mouthed bottle. Pour over the glue dilute carbolic acid, of the strength

recommended and sold for household purposes. The bottle may be heated by setting it on the back of a stove; or (and this is the writer's method) it may be laid slanting in the top of a lamp chimney, the wick first being lit and turned down. The glue will soon commence to bubble, or boil, and it is advisable to turn the bottle occasionally.

The thickness and fluidity of the glue is maintained at any degree sought, by adding glue or carbolated water, as indicated. The quickest drying glue is that which is rather stiff at normal temperatures; this may have to be heated a minute on a lamp before it will flow freely. If made thin, it far "out-sticks" most mucilages. The glue does not smell offensive, as it would were it melted in the well-known glue-pot. It is spread with a mucilage brush, and, as used, a supply of glue and diluted acid are added from time to time to replenish the stock.

A special glue may be made by dissolving purified glue in nitric ether, when there will be obtained a free-flowing ether glue. A few pellets of india rubber added to the solution will give it the quality, after hardening, of resisting moisture.

The Steam Radiator in France

By Frances B. Sheaffer



RANCE is adapting, little by little, certain American household features. The bathroom and open plumbing are being incorporated—slowly, it is true, but none the less inevitably—into modern French building construction. So, too, American methods of heating have revolutionized

Continental in-door life. The time was when no more than one or two rooms of an apartment or of a house were kept warm for the family who dwelt therein. These were most likely the *salle à manger*, and the kitchen, if the cooking was done on a coal stove. The salon was practically out of use, when the cold weather set in; and the sleeping-rooms were never warmed—a sufficiently hygienic custom if any individual of Latin birth could once be induced to sleep with the windows open.

Steam heating and hot air furnaces have given the people of France some new ideas of comfort, even though their naturally economical instincts impel them to take these benefits in homeopathic doses. A French hot-air register is a sort of toy. In a good-sized room, it may often be no more than six inches square; and in an apartment so inadequately heated, it is still necessary to wear many more woolen garments and thick wraps than are ever necessary in an American home of even heat.

The hot-air system of heating has not in any appreciable degree changed the style of furnishing of French rooms. The register is so inconspicuous a feature of an interior that it need not be considered at all in planning a decorative ensemble.

The steam radiator, however, is quite another problem. It is a definite piece of furnishing which fills a certain amount of space. In practical America, this useful heating apparatus is accepted just as it is, in all its bald utilitarianism. We need it over there, which is excuse enough for setting up its gilt or silver coils anywhere that will best serve temperature purposes.

French æstheticism could not quite reconcile itself to so homely an innovation, and immediately, it has become a subject for French ingenuity and fancifulness. A steam radiator is hard to beautify, and so the Continental decorators and designers have confined themselves rather to inventing new ways of hiding the unsightly things. The

draughty but picturesque fireplace has been for long a part of all interior schemes here in France. An almost unavoidable experiment, then, would be a combination of the new way of heating with the old. In one of the Louis XVI bedrooms recently displayed at the Salon du Mobilier in the Grand Palais, one decorative firm had hidden the steam radiator in the fireplace and covered it with a wire screen. That was not a bad idea, though the screen was unsightly.

In all of the recent Salons there have been exhibited more or less interesting "cache radiateurs." In the new Salon of M. L. Rion, a Belgian designer showed a handsome copper case, the motive being a peacock with spread

tail, the interstices among his tail feathers allowing for the distribution of the heat.

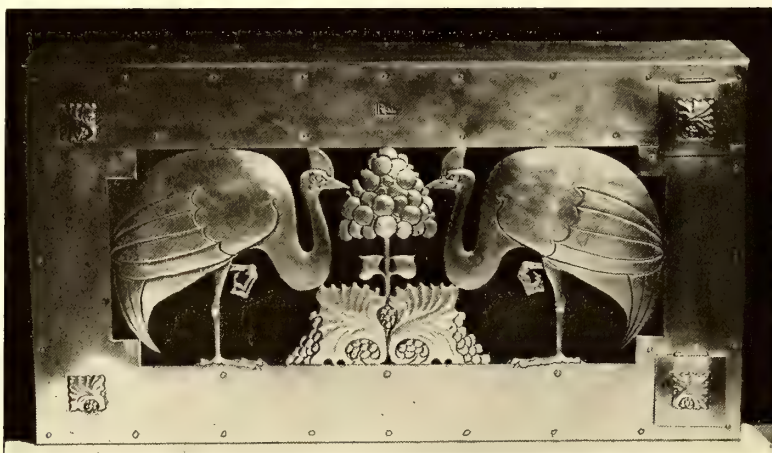
In the Salon d'Automne, a Polish artist resident in Paris, M. Stanislas Landau exhibited some still more elaborate "cache radiateurs," made of faience and metal combined. M. Landau's designs are original and artistic and they are quite possible for any interior furnished in the modern spirit. The photograph reproduced with this article is one of several designs made by M. Landau for some important decorative projects intrusted to him. The ornamentation both for the pottery case and the metal door is simple and eminently suitable for the materials employed in making the radiator cover.

Some of these cases are flat and are designed for side walls; others are made triangular in shape in order to be fitted into the corners of a room. Several of the covers allow for a special heating plant, which can be attached to the radiator when it is necessary to heat but one room—if the

weather is too mild to start the central heating system.

All of these treatments of the new heating instrument are admirable and they are a fine commentary on the Continental—more especially the Latin—way of looking at this matter of interior furnishings. The steam radiator in its original unadorned simplicity is as typical of practical America as these ornate and beautiful elaborations of the same articles are of artistic France.

The radiator as seen in the usual home is unsightly and the use of an ornamental one as presented herewith adds an artistic value in decoration that could not be obtained in any other way.



A radiator designed in the form of a peacock



An artistic design for a radiator

Residence of William L. Bailey, Esq., at Ardmore, Pa.

By Paul Thurston



THE residence of William L. Bailey, Esq., which has been recently completed at Ardmore, Penn., and which is illustrated herewith, is undoubtedly one of the best examples of the Georgian style of architecture built in that vicinity.

The chief characteristics of its design are the fine proportions of its outlines, its form, and the careful execution of its detail. There is no more splendid example of architecture to follow in the designing of a residence, than this classic form, and the reason this is so, is best found in the test of time given to any of its prototypes which have been built two hundred years; and which still stand out as examples of something better than any other class of buildings erected during the same period.

A driveway enters at one corner of the property, and sweeps around the circle in front of the portico built at the front of the house. The main walls of the building are constructed of local stone of a grayish blue color with rough faces, laid up with wide white mortar joints.

The great portico, supported on four massive Ionic columns, gives the keynote to the whole general architectural scheme. The floor of this portico is laid with red brick, in herringbone pattern and in white mortar.

The front doorway, with the small lighted windows on either side, is quite the feature of the entrance, which is direct into a handsome living-hall. On either side of the vestibule there are paneled seats. Opposite the entrance, a staircase of handsome design, ascends to the second story, and is composed of white painted treads, risers, and balusters, and a mahogany rail. This hall is treated in white enamel, and has a low paneled wainscoting and a massive wooden cornice.

To the right of the entrance is the reception-room finished in white enamel. It has an open fireplace with marble facings and hearth, and a mantel of Colonial style.

Back of the reception-room, and connecting with the hall, is the living-room, which is trimmed with mahogany. It has a beamed ceiling, and an open fireplace with facings of imitation Caen stone, and a mantel of mahogany.

The dining-room is built at the left of the entrance. It is a handsome room treated in white enamel. The walls have a low Colonial wainscoting above which they are covered with a tapestry wall-paper in green, blue and brown, finished by a heavy wooden cornice.

The fireplace has marble facings and a hearth, and a mantel of Colonial style.

The butler's pantry, kitchen, and servants-hall are fitted



The garden is built on an axis with the house



The house is built of stone

with the best modern appointments. The second story is divided into sleeping-rooms, which are treated with white enamel and one color scheme for the walls of each room.

The bathrooms have tiled wainscotings and floors, and are furnished with



The hall



The portico at the

RESIDENCE OF WILLIAM L.



front of the house



Another view of the house

porcelain fixtures and exposed nickle-plated plumbing, complete in every detail. A feature of this floor is the den, which occupies the space over the kitchen extension. It is finished with a forest green effect, and it contains an open fireplace and bookcases built in, and also a photographic dark-room.



The dining-room

AILEY, ESQ., ARDMORE, PA.



The house is built of stone

with the best modern appointments. The second story is divided into sleeping-rooms, which are treated with white enamel and one color scheme for the walls of each room.

The bathrooms have tiled wainscotings and floors, and are furnished with



The hall



The portico at the front of the house



Another view of the house

porcelain fixtures and exposed nickel-plated plumbing, complete in every detail.

A feature of this floor is the den, which occupies the space over the kitchen extension. It is finished with a forest green effect, and it contains an open fireplace and bookcases built in, and also a photographic dark-room.



The dining-room

RESIDENCE OF WILLIAM L. BAILEY, ESQ., ARDMORE, PA.

The third floor contains the servants' quarters, trunk-rooms, and storage.

The cellar, which extends under the entire building, contains laundry, cold storage room, heating apparatus and fuel-rooms; all being fitted up in the best possible manner.

The stable and garage, which are built at the rear of the house, are thoroughly equipped with every modern convenience. Both of the buildings are designed in harmony with the house, and are constructed of similar materials. Messrs. Bailey and Bassett, of Philadelphia, Pa., were the architects of this delightful house, stable and garage.

The ornament of every country house is to be found in the garden area, and Mr. Bailey's place is no exception to this rule.

The formal garden which is built at the south side of the house is laid out in a geometrical form, with a walk extending direct through the garden and terminating at a wooden seat built at the end of it.

The living-porch, built at the rear of the house, overlooks the natural wooded garden, which man has ornamented and improved by the building of walks in the forest through shaded glens and over rustic bridges which have been built across the numerous streams that are fed by the

large pool formed by the building of a dam to retain the water which comes into the property by natural streams. Groups of shrubs have been planted at every turn of the walks, and numerous wooden seats have been built in secluded spaces. A tea house is also built at the extreme end of one of the garden walks.

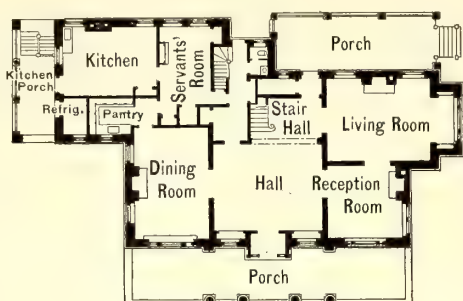
The grounds about the house are not fully completed and important changes and improvements are continually being made in the grounds and in the gardens.

There can be no hard and fast rules set in planning an estate like this, if there is to be any harmonious and picturesque results.

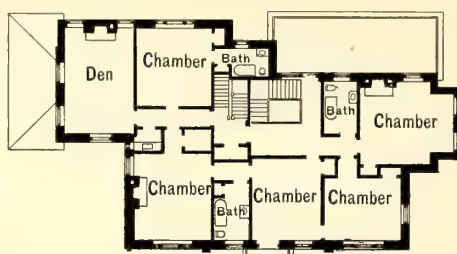
The manner in which the property is studded with magnificent trees about the front of the house and

around the sides, and the natural forest at the rear has made it possible to develop something beyond the usual.

The difficulty experienced, however, in most cases of this kind where nature has bestowed her richest gems, is that the work done in conjunction with the natural resources of a property have not been done with the same spirit of refinement as is expressed in the work done on Mr. Bailey's property. Many gardens can only be improved by the judicious use of garden accessories, and this is one which has been very carefully treated in this respect.



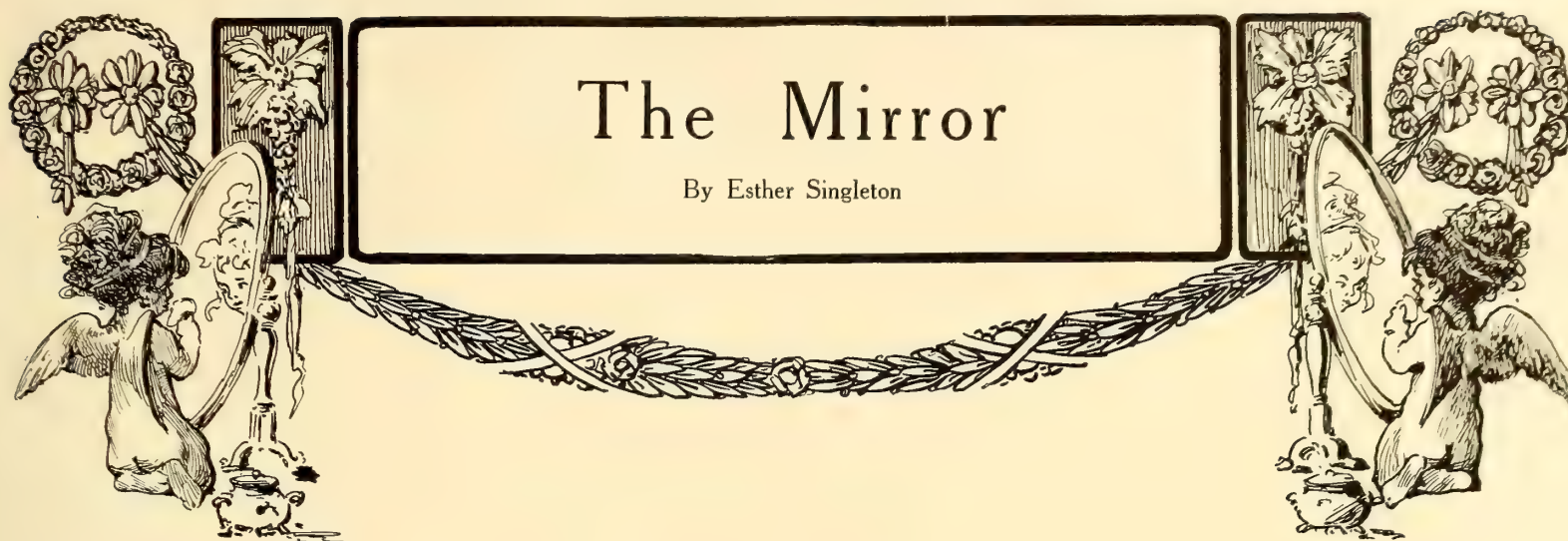
The first floor plan



The second floor plan



The living-room



UNTIL the Thirteenth Century mirrors were made of burnished metal. The first looking-glasses with silvered backs were merely small mirrors destined to hang on a lady's *châtelaine*. In the Sixteenth Century the art of silvering the back was brought to perfection in Murano; and not long after those celebrated glass-works were in operation, the French, Germans and English all stepped into the field, and began to make looking-glasses with more or less success. The French and English, however, achieved the best results in imitating the Venetian work. About the Sixteenth Century glasses with beveled sides (*à biseau*) were made in Venice and frames became of great importance.

A French authority tells us that "In Italy they were developed in redundant foliage, supporting figures of geniuses; or crowned with a pyramidal composition on which appeared the escutcheon of the owner; others were sculptured in hard wood, such as oak, the most perfect of these works being gilded on the bare wood with a species of bright gold called ducat gold; others were coated with that white paste which is still used and gilded on a light impression of vermilion."

"A great change took place under Louis XIV; Venice and its mirrors were left far behind; and after having vainly endeavored to bring over workmen from Murano to found a manufactory of glass in the faubourg St. Antoine, Colbert learnt that one already existed in regular working order at Tournellville near Cherbourg. The minister sent for Lucas de Nehou, the director, to take in hand the royal manufactory of glasses. Shortly after, he was able to send from it the splendid decorations of the *galerie des fêtes* for Versailles. Thenceforth it could no longer be a question of counterbalancing the minute dimensions of the mirror by the development of its frame; the latter therefore underwent a transformation, and, like the borders of wainscotings, was reduced to delicate arabesque combinations connected by wreaths of flowers, relieved by masks and palmettes, or by shells and acanthus foliage. Notwithstanding the increased dimensions of the glasses their effect was still more heightened by inlaid pieces. Thus sections of glass were ranged at each corner of the prin-

cipal sheet of glass, whether oval or rectangular, then pieces to form a border, and others forming a pediment at the top, and a pendant towards the base; gilded and carved wood united them all, hiding the joints by ingenious intersections, and furnishing the architectural framework with its chief designs, its stems and wreaths, its crowned masks, requisite for consolidating the masses and giving points of attraction to the eye. These sculptures are of extreme elegance of composition and of great delicacy of workmanship."

The Duke of Buckingham started a factory in Lambeth about 1670, and sent for the best glass-makers, glass-grinders, and polishers from Venice, which we are told, "succeeded so well as to be now enabled to send to that very place and to every other part of Europe, and to Asia, Africa and America, the finest glass of all sorts that the world can produce." In 1677 Evelyn notes of a visit to Lambeth: "We also saw the Duke of Buckingham's glass-works, where they made huge vases of metal as clear, ponderous and thick as crystal; also looking-glasses far larger and better than any that come from Venice."

The Vauxhall Plate Glass factory was in operation until 1780. Charles II forbade the importation of any kind of glass; and this, of course, gave a strong incentive to native talent. The secrets of manufacture were guarded, but glass was made in Vauxhall in much the same manner as in Murano. The largest sized plates were four feet; and when a large mirror was required, two or more pieces of glass were used. Small mirrors were also often made in two sections. Many of these Vauxhall mirrors were exported to America.

At first the frames were of ebony, olive-wood and walnut; at the end of the Seventeenth Century lacquered frames were popular and soft wood carved and gilded, or a composition of something like plaster of Paris, molded and gilt.

About the time of the Restoration decorative frames were made. At first they were architectural in character; but later they became simpler and were often but a narrow margin or "list" of walnut, or ebony, or wood stained black to represent ebony. The glass was usually beveled and the outline of the bevel followed the curves of the inner frame. The Vauxhall plates were small; and, therefore, the mirrors were often in



Fig. 1—Looking-glass with mahogany and gilt frame dating from the middle of the eighteenth century



Fig. 2—Eighteenth century mirror in two parts: walnut frame with gilt ornamentation

workmen made frames in England after the style of the French court and the great decorator of the age, Marot. Instead of the great wreath of flowers and fruit, the decorative motives were heavy garlands of the bell-flower, the mascaroon, the scroll and the urn. A "Queen Anne mirror," oblong in shape with elegantly carved gilt frame, the design being foliage and gadrooning, was, not long ago, sold in London for £26; and a mirror of the William III period in English marquetry frame, with flowers and foliage beautifully inlaid in colored woods and ivory on a walnut ground, £43. A pair of oval mirrors by the Adam brothers, on the other hand, in carved and gilt frame, brought £46.

Chippendale, being a carver, naturally delighted in designing frames for pictures and mirrors. In his day the tall pier-glasses between the windows were as important as the mantel-glass, and were frequently carved to correspond. Moreover, the girandoles that carried the side-

two pieces, the larger one at the base and the smaller one, forming a sort of panel, at the top. The upper panel was finished with a dull surface, and figures and patterns were cut in the back of the glass, producing an effect like that of embossed work or gem-cutting. Sometimes two or three plates were framed together and the joints hidden by bands of gilded wood, or metal, like the outside frame, or by strips of colored glass.

The great carver, Grinling Gibbons, made a number of exquisite mirror-frames with beautifully executed flowers and fruits; but the richly carved frame of his style soon changed for that of Louis XIV. French mirrors were now imported into England and many refugee Huguenot

blended with Chinese motives or the fantastic scroll and leaf-work of the Louis XV style which Chippendale used so beautifully. He was very clever—as clever as the French designers—in making the sconce-arms emerge from the leaves or scrolls in natural and graceful sweeps.

The Chippendale mirrors are frequently in several divisions; but the union of the separate plates is always hidden under the foliage or the rock and shell work. Chippendale mirrors now bring enormous prices. Within the past five years the following sums have been realized in London:

A Chippendale gilt mirror with three lights, 5 feet, 6 inches high, and 4 feet wide scroll frame with floral borders, £89; a pair of Chippendale girandole mirrors, 4 feet, 5 inches high, 1 foot, 5 inches wide; gilt and carved in Gothic design, £27; a pair of Chippendale mirrors, 8 feet long, 3 feet, 6 inches wide, with Vauxhall plates in two divisions; scroll and floral carved frame, surmounted with masks, £79; a Chippendale mirror, carved and gilt, 7 feet, 4 inches long, 4 feet, 2 inches wide, 90 guineas; a Chippendale bevel-edged mirror, 7 feet high, 3 feet wide, upright black frame, with festoons of flowers, foliage, rosettes, acorns and arabesques in relief, 38 guineas.

The mirrors designed by the Adam brothers are light, graceful and charming, and those by Heppelwhite are no less so. Of girandoles with sconce-arms the latter said that "they admitted of great variety in pattern and elegance" and are "usually executed of the best carved work—gilt and burnished in parts. They may be carved and colored suitable to the room." Heppelwhite was fond of the



Fig. 4—Oval mirror of the Heppelwhite period

lights for the drawing-room and dining-room and which were hung on either side of the mantel-piece, were also furnished with a looking-glass, not only for ornament, but for the purpose of reflecting the lights of the candles and rendering the room more brilliant. Chippendale's frames naturally show him when he is perhaps in his most characteristic moods. They bristle with spiky leaves in which long-tailed, long-beaked birds peck at scrolls, leaves, icicles, and sometimes squawk at little mandarins standing under pagodas. Subjects from mythology and Æsop's Fables are



Fig. 3—Looking-glass with walnut and gilt frame dating from the eighteenth century



Fig. 5—Oval mirror transitional from Chippendale to Heppelwhite

As far as this last instruction is con-

cerned the mirror and table in Fig. 7 (though of a later period than Heppelwhite) are correctly placed. The table is of the Empire style. The mirror, with simple gilt frame, is made in two sections.

The concave and convex mirror with gilt frames and branches for candles became very popular in Sheraton's day and they lasted for many decades. Such mirrors were frequently framed in black, ornamented with gilt balls, and surmounted by a gilt eagle. Many of these are preserved in old American homes.

Another style in great favor was the long mirror. Sheraton says:

"Glasses for chimney-pieces run various, according to the size of the fireplace and the height of the wall above. To save expense, they are sometimes fitted up in three plates and the joints of the glass covered with small gilt mouldings or plasters. At other times with the naked joint only. When they are of one plate, the frame in general is made bolder and more elegant."

Sheraton also says:

"In elegant rooms the chimney-glass is usually carried to the under side of the cornice of the ceiling; but to reduce the expense of the plate, sometimes a broadish panel is introduced at the top of the glass with a frieze and cornice above all, included in the frame of the glass."

"The most generally approved pilasters for chimney and pier-glasses are those of 3, 5, or 7 reeds worked bold; but which, in my opinion, still look better by being parted with a ground one-third of the width of the reed, which may be matted to relieve the burnished reeds. It is not unusual to have a twisting branch of flowers, or a ribband round the reeds rising upwards and terminating in some sort of Composite, Corinthian or Ionic capital. The panel above the glass is sometimes made quite plain and covered with silk as a ground for drapery, tacked under the corner of the glass to match that of the windows."

Towards the middle of the Eighteenth Century chimney-glasses with carved walnut or gilt frames valued at from thirty to eighty pounds were not uncommon in rich New England houses. They were often supplied with arms for candles. A gilt-edged walnut frame in 1748 is valued at 120 pounds, and another with walnut frame and brass arms at 37 pounds, 10 shillings. All through the last three-quarters of the Eighteenth Century mahogany was used for frames, and also pine wood stained to resemble mahogany. Walnut and gilded



Fig. 6—Eighteenth century mirror from the Brice House, Annapolis, Md.

wood was a very popular combination and the carved and gilded frame always held its own.

The American colonists always kept up with the latest fashions in England. In the wealthy houses of both North and South the newest styles in silver and furniture were always to be seen. In early days when mirrors came into use in England, the landed proprietors here had them also. The old inventories are full of entries of looking-glasses with olive-wood frames, looking-glasses with black lists, etc., etc.; and as the years go on and fashions change, the items in the wills and inventories show that the rich householders constantly bought the newest and the latest articles in furniture. Even if this were not the case, the many advertisements in the current newspapers of importations from London and the many cards from carvers and gilders and looking-glass makers who offer to remodel old glasses, cutting them into the correct shapes and sizes and framing them in the newest

styles, show that there was a great demand for such work. A glance through the old New York newspapers shows the following facts:

In 1730 "James Foddy, Citizen and Glass-seller of London, who arrived here at the end of last June and brought with him a parcel of very fine looking-glasses of all sorts," acquainted the public that he "undertook to alter and amend old looking-glasses."

In 1735 Mr. Duyckinck, at the Sign of the Two Cupids, near the Old Slip Market, had new looking-glasses and frames plain japan'd or flowered; and among the items advertised by various merchants we see gilt and plain looking-glasses of sundry sizes, in 1745; japanned dressing-glasses, in 1748; new fashion sconces and looking-glasses, in 1749; looking-glass sconces, in 1750; sconces and pier-glasses of all sizes, in 1752; an assortment of sconces, gilt and carved in the newest fashions, in 1753; newest fashioned looking-glasses from London, in 1757; a variety of sconces with branches in walnut frames with gilt edges, in 1757; looking-glasses framed in the newest taste, £8 to £30 apiece, in 1761; looking-glasses from 2 to 6 feet, in 1764; convex and concave mirrors, in 1764; two carved white-framed scone glasses, in 1764; handsome pier-glass and two sconces with gilt frame, in 1768; large pier-glass in an elegant carved frame, in 1769; painted frame looking-glasses, in 1773; and also in that year oval glasses, pier-glasses and

(Continued on page 441)



Fig. 7.—Mirror with gilt frame and console table of the Empire style



Fig. 8.—Mirror with gilt frame and table of the Heppelwhite style



The Wasp's Year

By Harold Bastin



HE social wasps of the genus *Vespa* differ widely in their habits from the social bees. The latter insects are, so to speak, much more civilized than the former; while their manner of life has been so often described that almost everyone is more or less familiar with the topic. About wasps, however, comparatively few people know more than that these insects possess stings, and that they are able and willing to employ these weapons on the smallest provocation. Yet in many respects the life history of the wasp excels that of the bee in interest.

The story begins in the dull days of the year. The nature student, grubbing among decayed timber during the winter months, often discovers a particularly large wasp ensconced in a dry crevice. This wasp is no ordinary insect. She is a dormant queen, destined to found a kingdom, and to become literally the mother of all her subjects. Her nuptials were accomplished in the late days of summer. Thereafter, warned by the chills of autumn, she sought out this snug hiding-place and composed herself for sleep—first folding her wings close to her sides and taking a firm grip with her jaws lest, in the oblivion of slumber, her foothold should relax.

With the early promise of spring the queen awakens. Her first care is her toilet, which she performs with skill and nicety. It has been said that if cleanliness be next to godliness, then insects are but one degree removed from piety; and certainly no insect is more scrupulous than the wasp. But there is a limit to everything. So when our queen has dusted her eyes, and furbished her wings, and polished her armor until her whole person shines and sparkles like a locomotive engine newly come from the shops, she turns her attention to a more serious aspect of life.

Her task is to discover a site for the founding—or, more correctly, for the hanging—of her kingdom. The reader must know that while some kinds of social wasps

hang their nests from the branches of trees, others hang them from roots in holes beneath the ground. The insect whose history we are at present tracing belongs to the latter group. Her ancestral tastes are wholly subterranean. So she flies with de-

Not infrequently, her house-hunting terminates in tragedy. Late frost or heavy rain, the beak of a bird, or the grinding heel of austere mankind—anyone of these may prove an overwhelming catastrophe to our vagrant queen, whose kingdom and people are as yet a vision of the future.

But we will assume that the wasp really finds a hole to her liking. It will be, perhaps, three or four inches in diameter, and from the roof will depend at least one substantial root.

She may enlarge the cavern somewhat, diligently carrying out tiny particles of earth. But, these preliminary arrangements over, she hastens to obtain a supply of material for her foundations.

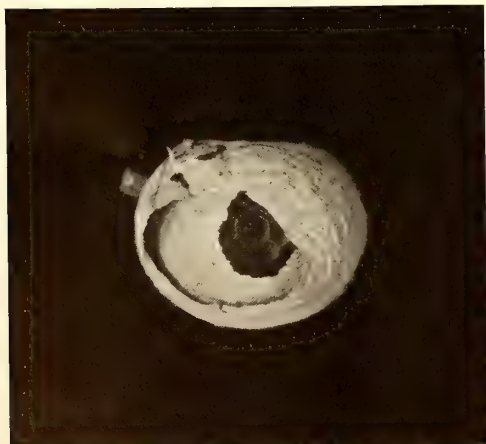
Alighting upon a fence or other exposed woodwork, she rasps with her jaws until she has accumulated a little bundle of woodfiber. This she macerates with the copious saliva of her mouth, and thus works up a kind of coarse brown paper. From this paper, as we shall see, her kingdom is entirely formed.

As yet, however, the queen has prepared only one tiny pellet. With it she flies back to her chosen hole, and spreads the moist atom upon a small area of the root which is to be her building site. Hour after hour, day after day, she repeats this journey to and from the hole, always returning with a pellet of *papier-mâché*. In the course of a week or so, the result of her labor takes the form of a little gray cap pendent from a footstalk attached by a triangular base to the root. It resembles a fairy umbrella blown inside out in a high wind. Beneath the cap, protected as by a domed roof, are three or four shallow chambers or cells; and in each of these the queen has laid an egg, which, as the opening of the cell is directly downward, she has glued firmly into place.

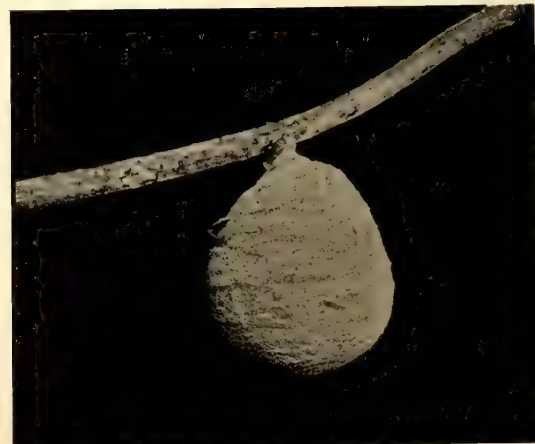
We must realize that the queen is in a hurry, and is not finishing her work as she goes. Her main object is to provide, as quickly as possible, loyal subjects who will assist her in her toil. So her first cells are mere shallow saucers when she lays her eggs in them. Later, when the grubs hatch and begin to grow, she builds up the cell walls round them as occasion demands.

The time now comes when the queen's powers of paper-making are well-nigh exhausted. But this is coincident with the matur-

ing of certain of the grubs, which issue from their cells as fully-fledged wasps. They are alike, and yet unlike, their queen mother. They "favor her" in the matter of form and color, while



Entrance to twig nest



Twig nest

liberate questing hum along the hedge-banks and the escarpments of gravel pits, seeking a cavern that will satisfy her exacting notions of fitness.



Cells with pupæ (magnified)

like her, each is armed with a sting. But they are markedly inferior in size; while, if we inquire closely into their physiological endowments, we shall find that they are imperfectly developed, and do not lay eggs. In fine, they come into the world for the sole purpose of performing the menial labors of their colony. Hence, they are usually termed "workers." With the advent of the workers, whose numbers are swelled daily as grub after grub reaches maturity, the queen-mother ceases to make paper, and devotes all her energies to egg-laying. The workers take over the feeding and cleaning of the grubs, as well as the extension and repairing of the nest. They fly hither and thither over the countryside, gathering food and building material; so that as the summer advances the kingdom and its population grow apace. The original comb is widened, new combs are suspended by paper stalks one from another, while layer after layer is added to the protecting cover. Moreover much time is devoted to the enlargement of the hole, the workers removing just enough earth from day to day to accommodate the increasing bulk of the nest. The smaller particles are carried out bodily, a task involving much toil, for the passage connecting the nest-hole with the open air may be several feet in length, while stones and pebbles of size, being undermined, gravitate to the floor of the cavern. The paper cells are cleared and used again and again for rearing successive relays of grubs. But, as the colony multiplies, and demands more standing room at night or in rainy weather, the cell structure is cut away from the upper and oldest comb, and a commodious hall is thus provided, wherein the adult wasps congregate for rest and warmth.

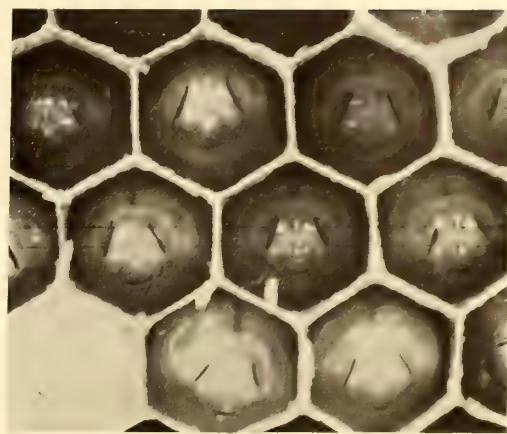
A thriving wasp kingdom may shelter as many as twelve hundred individuals of all ages, each one a direct offspring of the original queen.

It is a peculiarity of wasp architecture that although the nest is being continually enlarged, it never appears unfin-

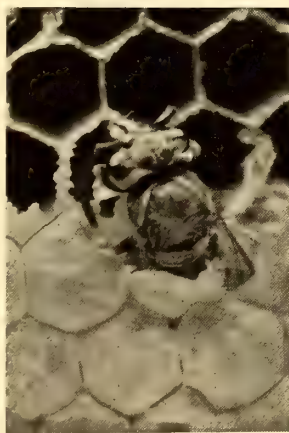
ished. The outer case is always round, shapely, and perfectly closed—save for the single entrance hole. As the combs grow laterally day by day, the protecting cover is cut away from within and replaced by fresh layers from without. Obviously this plan necessitates a much greater expenditure of labor and material than would be the case if the structure were planned in the first instance on a larger scale, especially as the wasps rarely re-make the old paper. But the nest must be kept constantly closed so that the grubs may be protected from cold and draught. Thus it comes about that the space occupied by a wasps' nest is filled twice over; first by the outer cover, then by the combs of cells.

Let the reader imagine for a moment that he has entered the wasps' kingdom, and is about to be "shown over" by one of the bustling workers. He will realize at once that he is in a topsy-turvy realm; for as he stands upon the smooth upper surface of one comb, and looks vertically upward, he sees right into the cells of the comb next above. Some of these cells contain eggs, other grubs in various stages of growth, while still others are closed to the eye by caps of spun silk. In these last are hidden wasp pupæ undergoing their final transformations.

Why the wasps should have chosen this head-downward method of rearing their babies, in contrast with the horizontal cell arrangement favored by the honey-bee, is a mystery, especially as it involves one obvious disadvantage. We have seen that the queen glues the egg to the side of the shell. When the grub hatches, it remains for a time with its tail in the egg-shell, moving freely upon this pivot, and craning its head towards the mouth of the cell to receive food from its nurses. But as it increases in bulk, it must change its position in order to avail itself to the full of the accommodation offered by the cell. Now the grub has only two prehensile organs, to wit, its jaws and a kind of sucker foot at its tail-end. Thus, if it relaxes its hold at one extremity before making fast at the other, it naturally falls headlong from the cell. Such catas-



Cells with mature wasp grubs (magnified)



Newly fledged wasp

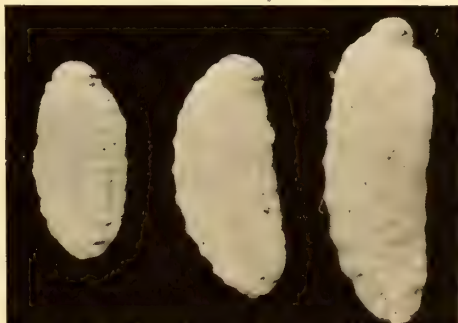


Egg and first stages of pupæ growth

A. building entrance; B. attachment to root; C. lateral galleries; D. entrance to nest



Ideal section through wasp nest



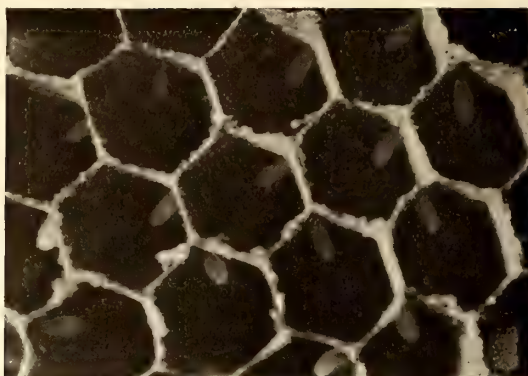
Growing wasp grub (magnified)



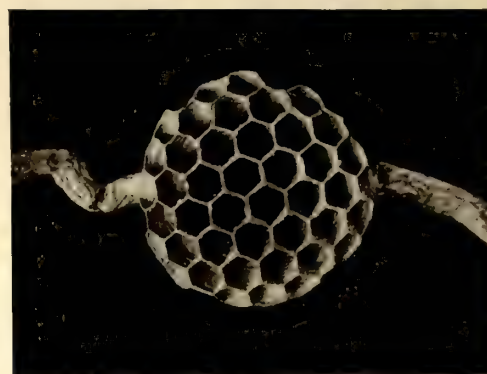
Full grown wasp grub (magnified)



"Young" nest, side view



Cells with eggs (magnified)



"Young" nest from above

trophes are by no means rare, and it is remarkable that their frequent recurrence should not have induced the wasps to alter their building arrangements. One would think that a daily shower of babies from the ceiling would suffice to teach the least attentive nurses that vertical cradles are unsafe. Not so, however, with the wasps. They seem to accept the accidents quite as a matter of course, and never replace the unfortunate infants, but deposit them on the refuse heap at a distance from the nest.

The lucky grubs which succeed in planting their sucker feet firmly upon the roof of their cells have soon nothing to fear, for they grow so fat as completely to fill their cradles. At regular intervals they are supplied with food by the busy workers, their diet consisting mainly of the soft parts of insects, varied by an occasional mouthful of nectar or fruit juice. In from ten to fourteen days after hatching, the grub is full fed, and ready to spin the silken cap over the mouth of its cell. Then, in private is enacted the marvelous transformation which culminates in the birth of a mature wasp. The whole metamorphosis, from egg to perfect insect, occupies rather more than three weeks under favorable conditions; but the newly-emerged wasp is pale and weak at first, and passes a period of probation within the shelter of the nest ere she goes forth to forage for the benefit of the community. The subsequent career of the individual worker wasp is soon told. At first, when young and vigorous, she devotes most of her energy to the maintenance and enlargement of the nest. But ere long, probably less than three weeks, her powers of paper-making fail her. She may now be styled an "old wasp," and finds fitting employment for her declining days in feeding and nursing the hungry grubs in their cells. She nourishes her charges, as we have seen,

chiefly upon insect fare; but she herself displays a marked preference for syrups and sweets. She visits the ripe fruit in our orchards, the jams in our kitchens, and the seductive dainties in the stores. She also gathers nectar from a few flowers, particularly the little liver-colored bloom of the fig-wort; while she may often be seen regaling herself at the tiny cups which the reader may find on the undersides of laurel leaves close to the stalks.

So far the population of the wasp kingdom has consisted of one queen-mother and a vast number of sexless workers.

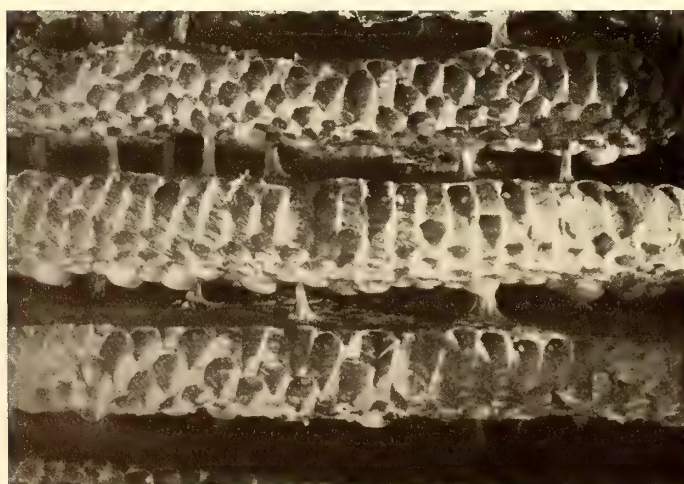
But, as summer wanes, certain large cells are prepared, and in them is reared a brood of young princesses and princes, or drones, as the latter are commonly termed. This brood may consist of scores or hundreds of individuals according to the prosperity of the community.

The amours and merry-making of these royal personages keep the kingdom in a whirl of joyous activity, for the advent of young princesses is not a signal for revolution, as is the case with bees. The workers go to and fro with their burdens, the grubs are cleaned and fed with due care. Yet the prescient observer realizes that the day of the wasp is well-nigh over—that the kingdom is about to fall. The chill of autumn will strike to the heart of the prosperous community with the terror of a pestilence.

Starvation will ravage it—for the insects store no sustenance within their paper cities, and, with the cold of approaching winter gnawing at their vitals, they cease to roam abroad in search of food. Thus they die—die by tens, by hundreds, by thousands—the enfeebled workers actually dragging the half-grown grubs from their cells, and casting them forth to share the common fate of the community. Only the young princesses survive, destined as they are to



Queen wasp preparing nest making material



Wasps' "comb" magnified



1

Wasp cells



2



1

2

3

Types of wasp

1, with worker pupæ; 2, with queen pupæ

1, Queen; 2, worker; 3, drone

found fresh colonies in the year to come. But as each seeks out her lonely hiding-place, she seems more like a wretched outcast than the royal mother of a future kingdom.

A word as to the age of the wasp. It is not possible to say how long, in favorable circumstances, a hive bee may live; but the limits of a wasp's life are precisely known. Drones enjoy only a few weeks of idle existence. Born in the late summer, they die at the approach of winter. Worker wasps, provided no accident befall them, may also live until the winter, so that a lucky individual who left her cell in the early days of June may live for almost five months ere she succumbs to the effects of cold, hunger, and extreme old age. Queens—the founders of kingdoms—are born at the height of one summer and continue until the close of the next; and a queen might thus, at her death, be fourteen or even fifteen months old.

One would imagine that insects as alert and courageous as wasps would contrive to hold all assailants at bay. Yet they are cruelly victimized by a strange beetle parasite.

The creature, with instinctive cunning, lays its eggs upon old wood. When the tiny larvæ hatch, they lie in wait until a wasp comes to gather fiber, spring upon her, and are thus carried to the nest. Each little rascal then makes its way into a wasp cell, and, fixing upon the grub which is the rightful owner, begins deliberately to suck its juices. So carefully, however, does the parasite regulate its appetite that the wasp grub still preserves sufficient strength to spin the silken cap over its cell. But this is the signal for the intruder to consummate its dark deed. The wasp grub is literally sucked dry, and the now fully nourished beetle larvæ completes its metamorphosis in the stolen cell, reposing upon the empty skin of its victim.

Although the wasp nurses constantly investigate the cells when they come to feed their charges, they never seem to discover the parasites. Yet when the perfect beetle emerges, it has to run the gauntlet of the whole colony in order to escape from the nest. For the wasps now recognize it as an intruder, and display a fitting hostility.

The Mirror

By Esther Singleton

Continued from page 437

sconces in burnished gold, glass bordered and mahogany and black walnut frames, with gilt ornaments of all sizes.

In 1769 Minshall, a carver and gilder from London, settled in Dock Street and had carved frames for glasses; and by the end of the century he had built up a big business in this special line. In 1775 Minshall's Looking-glass Store in Hanover Square, opposite Mr. Goelet's Sign of the Golden Key, advertised "an elegant assortment of looking-glasses, in oval and square ornamental frames; ditto mahogany. Also an elegant assortment of frames without glass.

Any Lady or Gentleman that has glass in old fashioned frames may have them cut to ovals, or put in any pattern that pleases them best. The above frames may be finished white, or green and white, purple, or any other color that suits the furniture of the room, or gilt in oil, or burnished gold equal to the best imported."

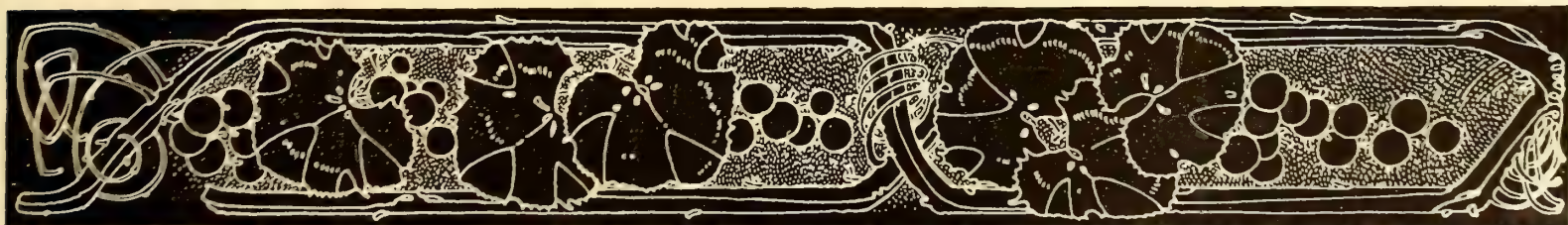
The mirror as a part of the dressing-table is comparatively modern. In the middle of the Eighteenth Century the little oval, shield-shaped, or square glass that stood upon one or two drawers, was a separate piece of furniture and was placed on a chest of drawers or shaving-stand. Sheraton and Heppelwhite frequently added looking-glasses to their dressing-tables and shaving-stands, but usually connected them in drawers with mechanism that allowed them to be elevated or hidden at pleasure. In the Empire period the mirror often formed a part of the dressing-table and the *cheval*, or glass on a horse frame, also be-

came popular in the dressing-room.

Our illustrations show several examples of this period taken from old homes in various parts of the country, both North and South. Fig. 1, dating from the middle of the Eighteenth Century, is a mahogany frame with gilt ornaments.

The husks at the sides are gilt and also the rosettes that ornament the swan-necked pediment between which is placed the rather scraggy bird that was such a favorite with Chippendale and his school. Fig. 2 is a simpler mirror in two parts, adorned with a small gilt device. Fig. 3 is a looking-glass of walnut and gilt frame, with a gilt urn between the broken pediment. Fig. 4 is an oval mirror of the Heppelwhite period, the border of which is gilt with glass panels. The old Chippendale, or Louis XV scroll, still lingers as a motive of decoration. This scroll is more apparent in Fig. 5, where the draped urn also appears—a motive that was not used by Chippendale. This border is, therefore, an interesting combination of the old and new fashions. Fig. 6 is still earlier with a panel at the top for a picture or any other decoration desired. Fig. 7 and Fig. 8 are early Nineteenth and late Eighteenth Century pieces. The latter is of the Heppelwhite school and accords perfectly with the little Heppelwhite table beneath it.

A handsome Louis XV mirror at the Château de Saint-Germain-en-Laye had a glass 28 inches high and 21 inches wide framed in a border of carved leaves.





Stucco Houses of Distinction

By Burr Bartram



IN selecting a site for the attractive residence built for William Spencer Crosby, Esq., at Glencoe, Ill., the crest of a beautifully rounded hill was chosen with a long axis of the house arranged so that the principal living-rooms should have a southerly exposure.

An approach to the house was arranged to come in at both sides of the property to the front entrance-porch, built at the front of the house, which is a simple one of trellis work designed in an artistic manner.

In designing the house, as illustrated in Figs. 1, 2, 3, 4, and 5, the architect concluded to confine the treatment of it to the simple lines of the Italian villa, a style of architecture so frequently seen in the Italian villages.

The massive wall surface pierced by numerous windows is a characteristic of this style. The living-porch, Fig. 2, is built at the rear of the house, overlooking the Skoki valley, which recedes abruptly from the rear of the property.

The exterior walls are built of frame, and then covered with cement stucco left with a rough surface, and in its natural silvery gray color which harmonizes well with the Italian green of which the trimmings are painted. The roof, which is an elongated one, is covered with shingles, and is stained and fin-

ished in a silvery gray color. Its lines are broken by three dormer windows placed at equal intervals apart.

After entering the house one is impressed by the simplicity of its treatment. The vestibule which is entered direct from the porch and on a level with it, is paneled. A toilet room is conveniently placed at one side of the vestibule. After passing through the second door of the latter, steps lead to the floor level of the hall. This hall is a central one and extends through the house. It is treated with white paint. The staircase, which is an ornamental one, has white-painted balusters and a mahogany rail. The main feature of the first floor is the living-room, which is treated in white enamel. It has a large open fireplace, and bookcases are built in at one end of the room.

The dining-room, to the right of the hall, is treated with white enamel paint. A door from this room opens to the serving pantry which is provided with a butler's-bowl,

dressers, cupboards, etc. Another door opens into the kitchen which is fitted complete with all the best modern conveniences. An unusual feature of the kitchen is the extra large store pantry. The lobby is built at the front of the house and connects with the rear porch. This passage is large enough to admit an ice box.

The second story has a white painted trim. This floor is divided into the owner's suite, consisting of one



Fig. 1—A stucco house of excellent design

large bedroom and bath, two guest-rooms with attached bath, large linen closet and servants-room, reached direct from the kitchen. There is also a large loggia, which is used for outdoor sleeping purposes.

The bathrooms have tiled floors and wainscoting and are furnished with porcelain fixtures and exposed plumbing.

The third floor is divided into sleeping and trunk-



Fig. 2—The living-porch is built at the rear of the house

rooms. The laundry, heating apparatus and fuel rooms are placed in the cellar.

Messrs. Schmidt and Garden, of Chicago, Ill., were the architects of this delightful house.

A stucco house of fine design is illustrated in Figs. 6, 7, 8, 9, 10 and 11 and it is the one that has been built for C. C. Canahan, Esq., at Wilmette, Ill. The exterior walls are constructed of wood, and are cov-

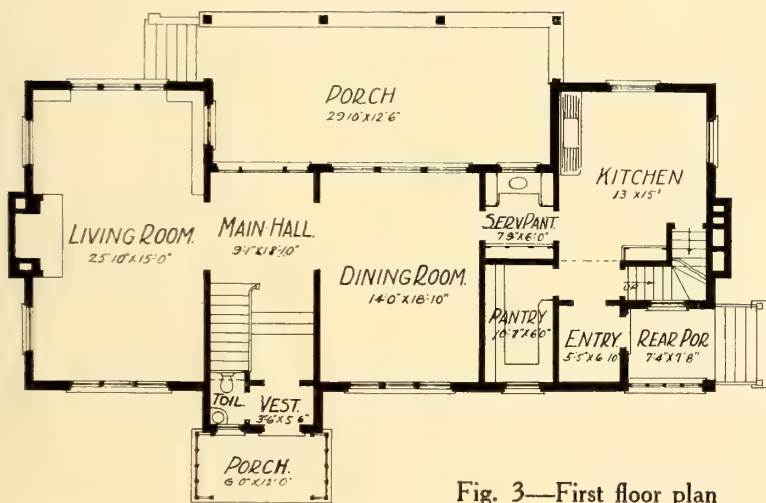


Fig. 3—First floor plan

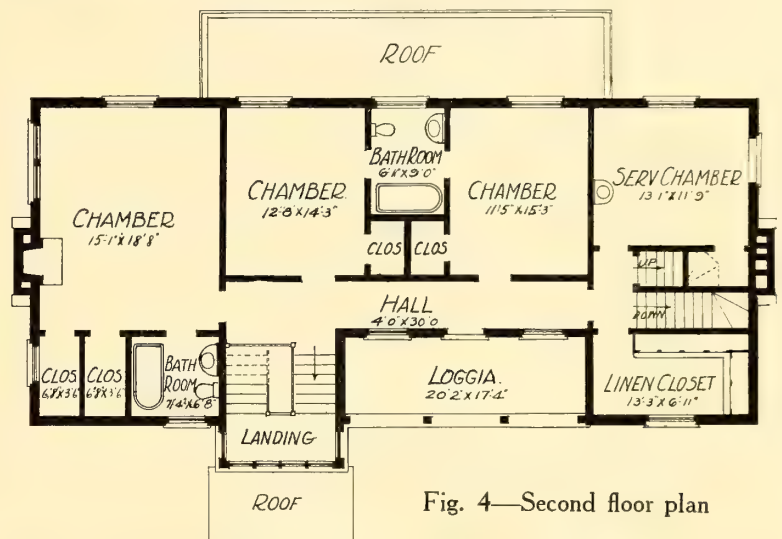


Fig. 4—Second floor plan



Fig. 5—The service end of the house is designed in an artistic manner



Fig. 6—The entrance porch

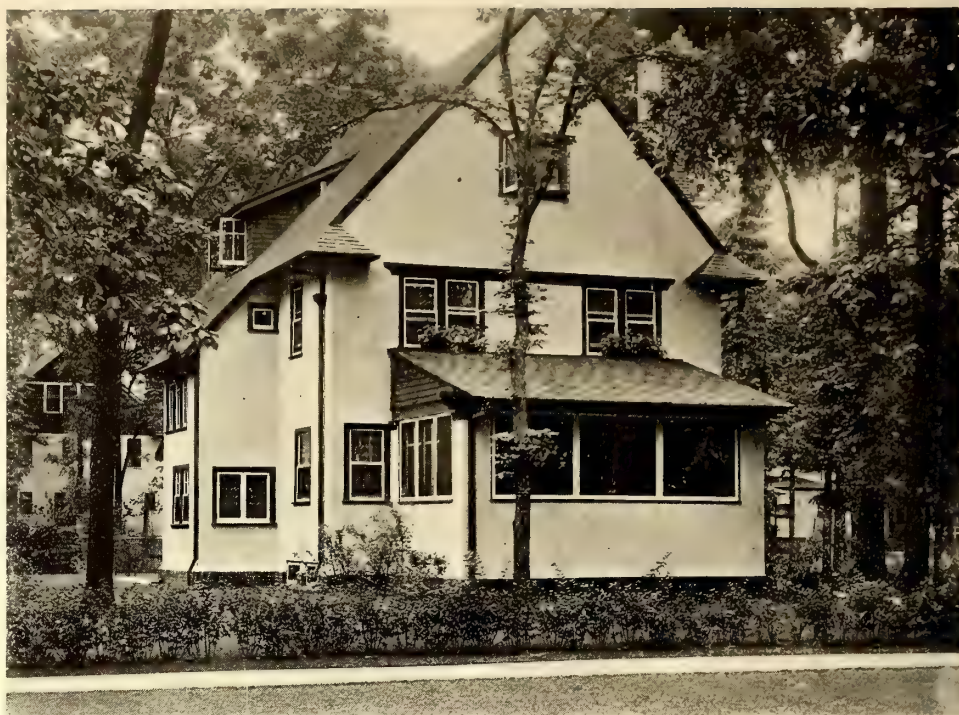


Fig. 7—A stucco house of good design

ered with cement stucco and finished with a grayish white color. The trimmings are stained and finished in a soft brown, while the sashes are painted white.

The roof is covered with shingles and is stained and finished in a dull brown tone. The entrance is ornamented by a porch with Doric columns. The vestibule forms an entrance to the hall, which is a central one, terminating in a den, which is built under an ornamental staircase, ascending to the second story. This hall is trimmed with oak.

To the left of the entrance is the living-room, which extends the entire depth of the building. This room is trimmed with oak, and is finished in Flemish brown. The ceiling is beamed and at one end of the room there is built an open fireplace which is furnished with tiled facings and hearth, and a mantel of handsome

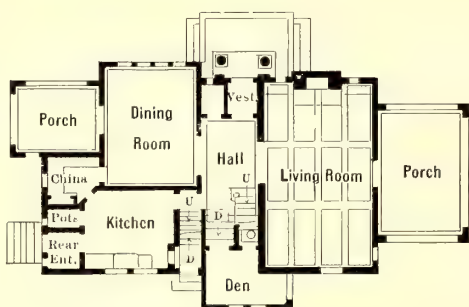


Fig. 8—First floor plan

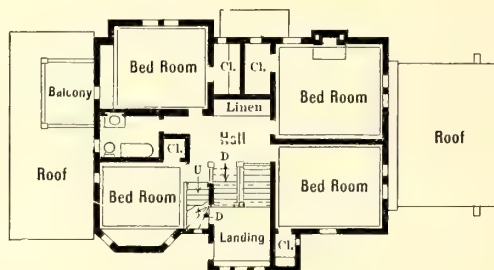


Fig. 9—Second floor plan

design. The dining-room is also trimmed with oak and it has a wainscoting composed of battens which are finished with a plate-rack. A feature of this room is the French windows which open onto the living-porch built at the

side of the house. French windows from the dining-room open onto the porch built at one side for breakfast and luncheon uses.

The butler's pantry is fitted with drawers, cupboards and china closets. A door opens from the butler's pantry into the kitchen, which is fitted up complete with all the best modern conveniences. A lobby large enough to admit an ice box is also provided.

The second floor is divided into four bedrooms and a bathroom. The bedrooms are painted white, and the walls of each of the rooms are tinted.

The bathroom has a



Fig. 10—The entrance front

tiled wainscoting, and is furnished with porcelain fixtures and exposed nickel-plated plumbing.

There are ample servants' quarters on the third floor, and the cellar contains heating apparatus, fuel-rooms and laundry. Mr. Arthur G. Brown, of Chicago, Ill., was the architect.

Another house of distinction is the one which has

been lately erected for William H. Wood, Esq., at Rochelle Heights Park, New Rochelle, New York, and is presented in Figs. 12, 13, 14, 15 and 16.

This house is distinguished on account of the treatment of the exterior elevation, which is executed in a direct and simple manner without ornamentation other than that which is necessary in order to provide an entrance-porch, a porte-cochere, and a living-porch. These are the only ornamental features of the building, and the result marks a departure from the superfluous embellishments so frequently seen.

The house has an underpinning built of local stone which is laid up at random with rough faces. The remainder of the building is of frame construction with the exterior covered with cement stucco finished in a pure white. The trimmings are painted white. The roof, of simple line and form, is covered with shingles and stained a soft brown.

The entrance-porch is treated in the Doric order and has a concrete floor. The vestibule has a tiled floor and a paneled wainscoting.

The first floor is trimmed with chestnut, which is stained and finished in a soft tone of brown.



Fig. 11—The dining-room of Mr. Canahan's house

window, furnished with a seat, is provided at one side of the room. To the left of the hall is the dining-room, which is furnished with a high paneled wainscoting finished with a plate-rack. The ceiling is furnished with boxed beams.

A door opens from the dining-room to the butler's pantry, which is fitted with butler's-sink, drawers and cupboards. Space is allowed for the ice box, with an outside entrance thereto.

The kitchen is fitted with all the very best and the latest improvements.

The second floor is divided into sleeping-rooms. It contains four bedrooms provided with ample closets, and a bathroom furnished with tiled wainscoting and floor, and porcelain fixtures and exposed nickel-plated plumbing. A feature of the plan is the toilet, which is separated from the bathroom, thereby affording a greater convenience than would otherwise be obtained if it were placed in the bathroom.

The trim of this floor, with the exception of the hall, is of white wood, treated with white paint and a dull finish, while the doors are stained and finished in mahogany.

The third floor contains the servants-rooms, trunk-rooms and open storage space, while the cellar,



Fig. 12—The entrance-porch of Mr. Wood's house

which is cemented and extends under the entire house, contains laundry, cold cellar, furnace-room and fuel-room.

Mr. Fred M. Truex, of New York, was the architect of this very interesting house.

The three houses illustrated herewith, are not only distinctive in themselves, but are also absolutely separate in character and design one from the other. The artist brings to the adornment and



Fig. 14—A porte-cochere is built at the side of the house

equipment of the house a special feeling for artistic fitness, and a personal note of comfort and achievement that place the houses designed under such conditions in a class of their own. Consequently, while these houses do not illustrate a definite tendency in any one particular style of architecture, they do indicate and express the tendency towards excellence and are worthy of attentive study, and will repay every attention that is given to them.

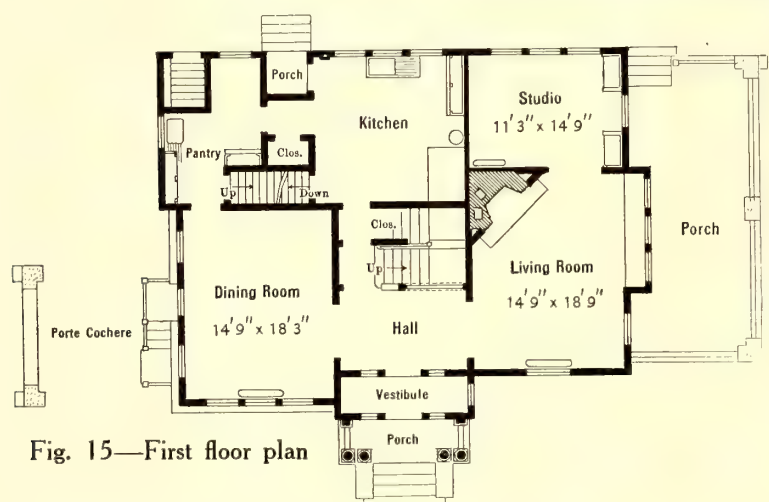


Fig. 15—First floor plan

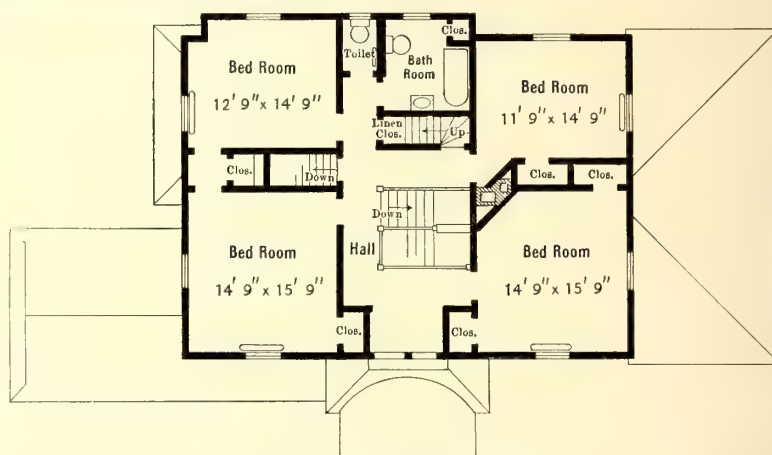


Fig. 16—Second floor plan



Fig. 17—A rough stone fence encloses the estate



The City of the Sun

By Peter Roveda

DURING much active technical study, and large practice in different parts of the world I have given my attention to the important question of housing for the masses, and have found an economical solution which is practicable for the poorer classes, hygienic for their physique, elevating to their morals, provides them with a salutary habitation, and which stimulates them to become proprietors of their homes through effort.

I transform the square block into a circle of the same diameter as the square, which I subdivide into 80 radial lots converging to the center, and I divide these lots in the center to form a circular street of 5 yards in width, to permit communication with the houses in the interior which are joined to one other, and two transverse streets and also longitudinal streets, and within the third circle in the center a circular garden is formed of 40 yards in diameter intended for the common recreation and particularly as a playground for children, being thus out of danger.

In the center of this general garden is provided a pavilion of two stories. The halls on the ground floor would be apportioned thus: Two rooms for infant schools; one for a medical dispensary; one for a gymnasium; and one for the purposes of steam heating, electricity, water and fire pumps. In the center, a hall for spectacular shows, conferences and other entertainments: On the first floor a hall to be used as a library; one for administrative purposes; one for the various religious sects; and a fourth for classes in arts, trades and music, and a principal hall for a permanent exhibition of applied arts, industry, science, literature and commerce.

Inserted in the four corners which remain free from the circular arrangement, are four chalets for use as business

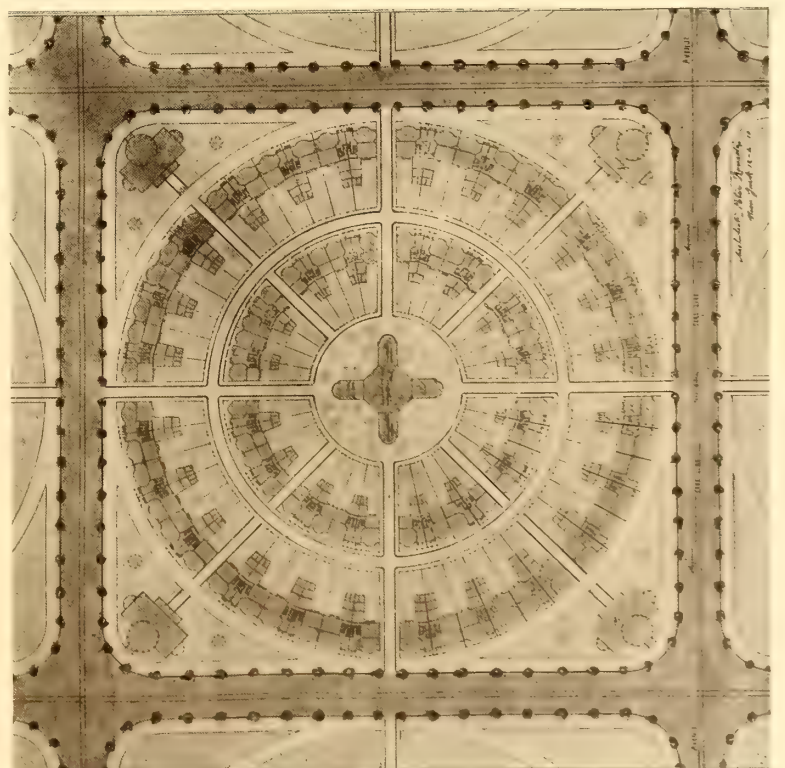
houses, such as groceries, dry goods shops, cafés, dairies, etc., in a manner to provide all commodities for the 80 families which occupy each block, by having their necessities at hand; and at the same time to form this business in co-operation. These four chalets are isolated, and have on their first floor an apartment for a family, and are encircled by gardens provided with two kiosks. For each of the 80 lots I have designed a two-story house completely independent, with a garden in the front and in the rear, and with two communications, one to the street and one to the common garden. Each house will have all modern comforts, heat, hot and cold water, electricity, and gas, and will be constructed in accordance with the most modern system and materials, sanitary and proof against fire and earthquake; being all framed in iron. They will have a cellar and a storeroom, and on the ground floor there will be a vestibule, hall, dining-room, parlor, kitchen, wash-room, pantry and toilet. On the first floor, a hall, three bedrooms, a bathroom and a toilet, with an attic above.

This circular distribution permits of the entrance of the sun at all hours of the day, and also of air and of light; and shortens the means of transmission. The principal avenue will be 18 yards wide and will be lined with trees. The houses of each family will be insured in special insurance companies. The price being very low, will easily permit the masses to become proprietors by amortization each week or month of the price of the property within a period of 12 or 15 years, so that the satisfaction of ownership of their own dwellings will habituate them to economy, it being a great advantage to the families and also to the land that they become title holders.

This will increase the noble sentiment of love for country; a sentiment which forms the true grandeur of a nation, as history teaches us. I have called my project "The City of the Sun," because it admits air and light.



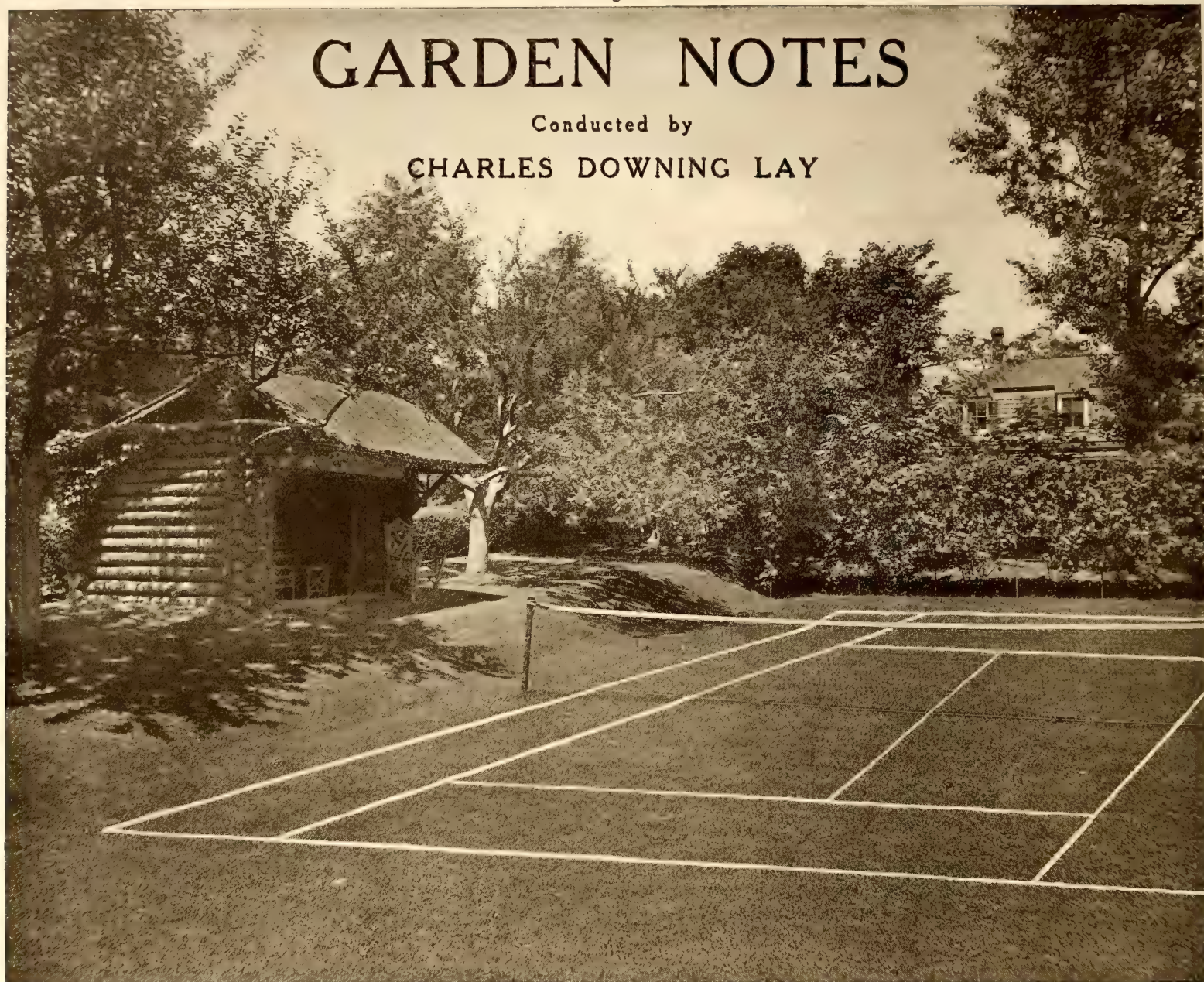
The general plan



A section of the general plan

GARDEN NOTES

Conducted by
CHARLES DOWNING LAY



Tennis Courts



It is not a hard matter to build a clay tennis court, though it requires some skill and judgment, since it is not always easy to get the best materials.

Courts can be made of "binding gravel," as it is called near Boston. This is a gravel which contains just the right amount of clay to make it pack hard. It is the simplest and best material to use because the only labor needed is in the spreading and light rolling afterward. The gravel packs with use and the court becomes harder all the time.

Clay courts are made by excavating the area of the court eight to twelve inches deep, spreading a layer of cinders six to eight inches deep and over that a layer of clay two to four inches thick. The clay is broken up into fine lumps sprinkled with sand and then watered and rolled. This process of sanding, watering and rolling must be repeated until the court is hard and smooth.

Such a court will last in good condition for years. It would be an improvement, however, to put a layer of broken stone under the cinders. Stone and cinders are both to provide under drainage and keep the court from heaving in winter and to make it dry out quickly after a rain.

When crushed stone is used for a court the first layer should be four inches thick of $2\frac{1}{2}$ -3-inch stone. This is bound with earth and rolled with a heavy roller. On top

of this is laid a course of $1\frac{1}{2}$ -inch stone two inches thick. This can be bound with screenings and dust which should be rolled and watered until the surface is smooth and uniform.

A good grass court is the best to play on and can be made quite easily if the soil is deep and rich, not less than eighteen inches deep. Seed with one bushel of Kentucky Blue grass; roll, weed and water constantly the first summer, and do not play on it until the second year. Further directions for making a grass court were given in AMERICAN HOMES AND GARDENS for June, 1910.

The space allowed for the court should be at least 120x60 feet. Sometimes only the court itself is clay and the space between it and the back net and the sides are kept in grass. This is a compromise and is not so good as having the whole area either grass or clay.

The back net should be at least ten feet high. It need not extend along the sides any farther than the service line.

It is seldom that one sees the accessories of a court well designed and more seldom still does one see a court well located in relation to its surroundings.

It is a great pity to waste the opportunity for an effective formal treatment which the level rectangular area of a tennis court gives yet how often do we see a court dropped, as it were, without thought, in the middle of a lawn; ineffective itself and spoiling the lawn!

For the back net, masonry or wooden posts, with lattice

work between will be much more attractive than the ordinary affair of iron and wire. The trellis work might have openings in it like windows which could be covered with wire. The vines would then grow on the trellis and could be kept off the wire, preserving the open appearance but stopping the balls just the same.

The court should always lie north and south which gives the best light for the players, and the grand stand or judges' platform should be on the west side, so that the spectators will not look into the sun when watching a game in the afternoon.

The entrance to the court should be in the middle, not at an end through a gate in the back net.

The judges' stand should be slightly raised above the court, and it combines well with steps from a higher terrace or with a tea house or a pergola. The tea house might have a broad terrace in front which would serve as a grand stand for the "gallery."

A very good arrangement is to have a broad walk or terrace eighteen inches or two feet higher than the court, completely surrounding it. Such a terrace permits endless architectural embellishment, in the way of seats, balustrades, retaining walls, etc.

A combination of bowling green and tennis court is very desirable, because the bowling green should be large enough for three or four courts. One court can then be laid out wherever one likes and still leave room for bowling.

The tennis court should be near the house, yet not too near or it will not be sufficiently secluded for the negligee attire one likes when playing tennis. If a broad terrace comes between the house and the court, or if a long walk connects it with a garden or with the forecourt, it will be better than having it close to the house. In any case the tea house or grandstand should be at the end of a vista or on some important axis, where it will add to the general scheme of the place and where its location will at once be felt to be reasonable and proper.

Where the place is all side hill it may often be impossible to get such a large level area as a tennis court near the house or even connected with it, and in this case it may be better to have the court away from the house and hidden from it, making a separate little layout which might be no less delightful, because somewhat casual and unexpected. I think it will be found that a tennis court properly located and with its architectural features thoughtfully designed will take a different place in the life of the estate and will become the centre of all the outdoor functions; garden parties, teas, theatricals and concerts will all find a convenient setting in such a court. It is desirable to have tall trees on the sides of the

courts to give shade, but they should not be planted at the north or south because in failing light (when one is often forced to play) the ball cannot be seen against a background of trees as readily as against the sky.

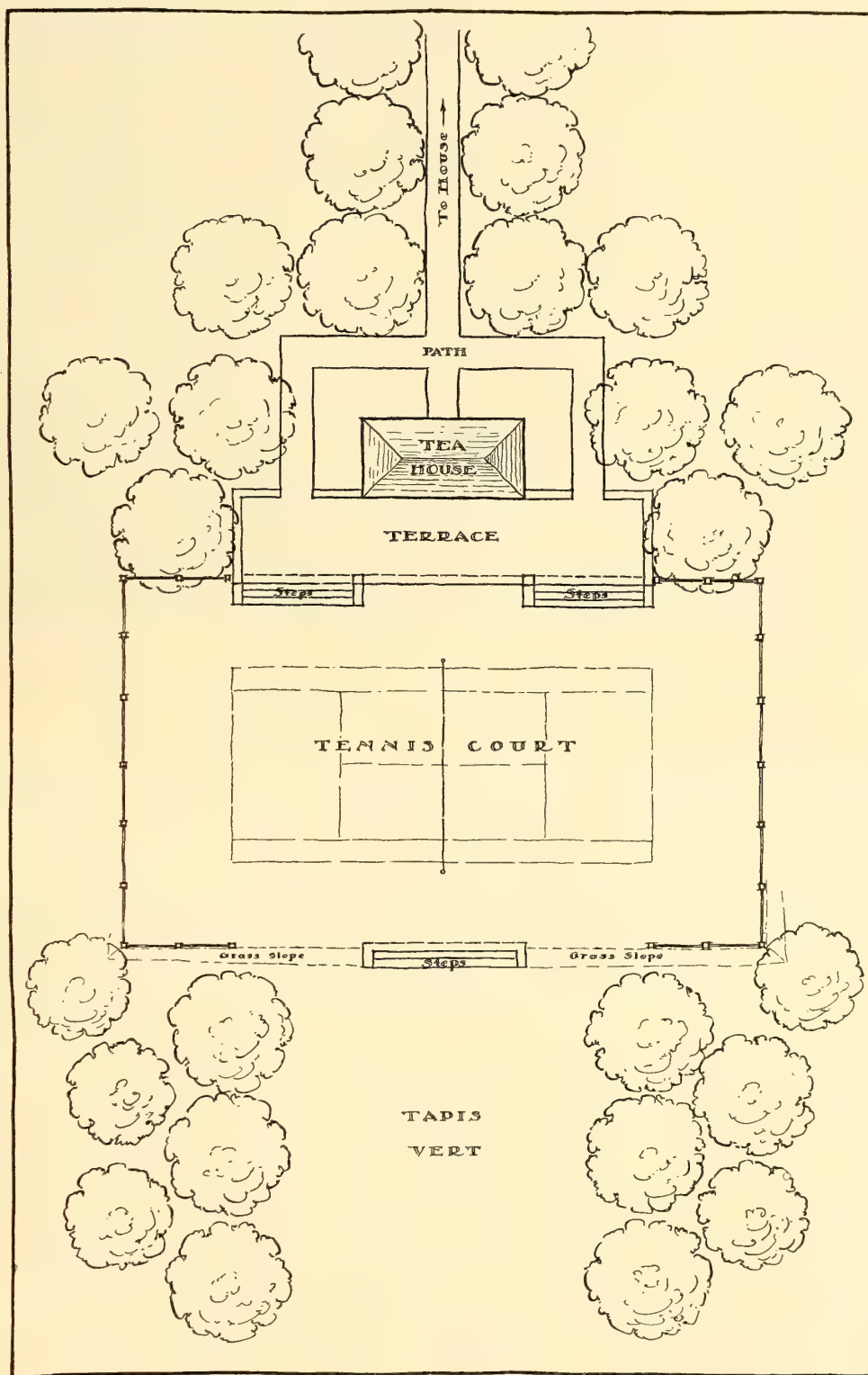
The photograph on page 448 shows an interesting log cabin used as a summer house at the side of the tennis court.

The photograph on page 450 shows a court with a pergola at one side and this seems a pleasing arrangement. On this court a novel and ingenious scheme was tried. The lines of the court are two inches wide, of crested dogtail grass, which is a light or yellowish green, while the rest of the court is principally dark blue Kentucky blue grass.

This is done by seeding first with the Kentucky blue grass. When that has formed a good turf the lines of the court are marked out with string and a narrow strip of sod two and a half

inches wide is cut out on the lines, which are then filled with strips of soil of the crested dogtail grass, which was sown for this purpose in another place.

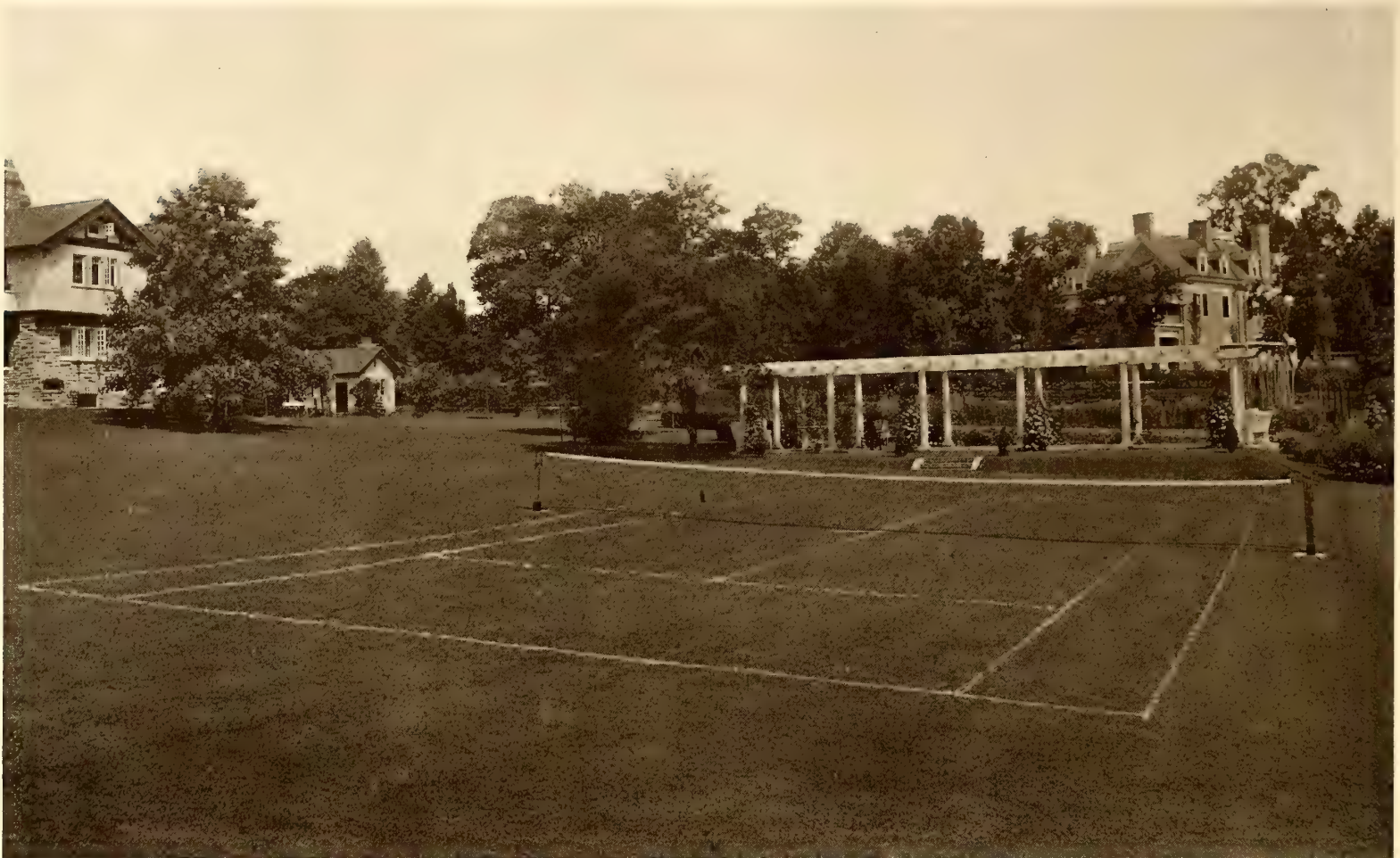
How durable this is or how long it will be before the grasses become so intermixed that the lines lose their sharpness, I do not know; nor do I know whether the contrast is sufficiently sharp to make one sure of them when playing a swift game, but the idea is excellent and adaptable to many



things besides tennis courts. Roses are in many ways the best vines to grow on the back nets of the tennis court, and a variety of the new climbers should be used. Dorothy Perkins with pink flowers is one of the best. Tausandschön,

growers are too rampageous to look well on such a place.

The slow growing Enonymus might be the surest of all if an evergreen vine is desirable. It has no noticeable flower, but its leaves are small, which is an advantage, and



Crested dogtail grass forms the lines of the tennis court

Flower of Fairfield, Hiawatha, Lady Gay and Wedding Bells are other good ones.

Clematis can be used, too, and Akebio, but honeysuckles, bittersweet, trumpet vine, moon flower and other vigorous

it grows upright and compact. It needs very little training and almost no pruning until it reaches the top and begins to bend over. The color is excellent and changes very little in the winter, remaining bright throughout the year.

Conservatory and Greenhouse Heating

By George E. Walsh

THE designing and construction of greenhouses and conservatories follow very similar lines in all parts of the country, and the essential points of difference are found chiefly in slight modifications to suit local conditions. As built to-day the greenhouse, and the conservatory in a lesser degree, offer less resistance to the cold than any other type of house, and the problem of heating them to a proper temperature is correspondingly difficult. There must be a great exposure of the house to the sun and winds, and with only a protection of glass between, frost and cold can easily get in. Moreover, the greenhouse or conservatory must have a higher temperature than the living-house for many plants, and the heat must be evenly distributed throughout. At all times the heating apparatus must be ready to respond quickly and promptly to any sudden change in the weather, and if not able to do this the whole season's work may be ruined in one night of cold.

Much of course depends upon the plants that one intends to raise in a greenhouse or conservatory, for some

require much higher temperatures than others. Lettuce and violets, for instance, can be raised most successfully in a temperature of 45 to 50 degrees, and a greenhouse which cannot be kept warm enough for cucumbers could be made to do well with the two former. For general purposes a greenhouse should be able to maintain a temperature of 55 to 70 degrees. Roses do the best in a temperature of 60 to 65 degrees; carnations, 50 to 55; chrysanthemums, 55 to 60; violets, 45 to 50; tomatoes, 55 to 60; radishes, 50 to 55; cucumbers, 65 to 70, and lettuce, 45 to 50 degrees.

In order to raise flowers and vegetables which require a very high temperature it is thus necessary to keep them in sections of the building partitioned off so that the rest of the place will not be overheated for the general run of plants. Such a partitioned section can be utilized also in forcing seeds which require high temperatures for their best germinations. Otherwise, however, the heating of either conservatory or greenhouse should be uniform so that no part is overheated and others underheated.

In order to heat a greenhouse properly it is necessary to

determine its cubic contents and also its glass surface area. The problem of house heating is much simpler than for a conservatory or greenhouse, for in the first there is no glass roof to consider. The method of finding out how much heat is required for a greenhouse is to multiply the length by the breadth of the house to determine the number of square feet on the ground. When this measurement is obtained add to it one-third to make allowances for the pitch of the roof and the glass ends. The figure thus obtained will give approximately the number of square feet of glass exposure. Some houses have a belt of side glass around one side and the ends. In such instances the number of square feet of this side glass should be obtained and added to the above. Most houses do not have the side glass, and the first rule covers their case entirely.

As an example of this method of computation, suppose the greenhouse is 20 by 80 feet in ground measurement. The computation of the glass area would be as follows:

20 times 80 equals 1600, divided by 3 equals 533.

1600 plus 533 equals 2133 square feet of glass.

If there is a two-foot belt of glass around the long side we would have to add to the above 2 times 80, or 160 square feet, making a total of 2293 square feet of glass surface. Heat losses are much greater in greenhouses than in other buildings, and it has been necessary to construct a table of heating averages rather higher than for residences. The tables of heating averages below are used successfully, and they answer all purposes in determining the amount of heat required for any conservatory or greenhouse. From these tables, and the measurements of the house, it is then a simple matter to determine the whole question of heating. As most greenhouses are heated to-day by either steam or hot water, tables have been prepared for these two methods of heating only.

STEAM HEATING.

Temperatures	Sq. ft. glass surface	Coil or radiating surface
0 to 50 degrees	7½	1 sq. ft.
0 to 60 degrees	6	1 sq. ft.
0 to 70 degrees	4½	1 sq. ft.
0 to 80 degrees	3	1 sq. ft.

HOT WATER SYSTEM.

Temperatures	Sq. ft. glass surface	Coil or radiating surface
0 to 50 degrees	3¾	1 sq. ft.
0 to 60 degrees	3	1 sq. ft.
0 to 70 degrees	2¼	1 sq. ft.
0 to 80 degrees	1½	1 sq. ft.

Now to obtain the temperature desired in a greenhouse of the size mentioned we must divide the total amount of glass surface by the figure in the middle column. For instance, if we want a temperature of 60 degrees with a hot water system we divide the total glass surface of 2293 by 3, which gives us 765, which is the number of square feet of radiating surface required to produce this temperature. Or if a steam plant is installed, and a temperature of 60 degrees is desired, we divide the glass surface by 6 and obtain our radiating surface. It is a very simple matter thus to work out the problem of radiating surface needed for any temperature. Much, of course, depends upon the heating plant, and to make the rule accurate it should be understood that these results are obtained in a plant where

the temperature of the hot water carried is 180 degrees at the heater. If a steam plant is used the estimates are based on a temperature of 219.5 degrees Fahrenheit or a pressure of 2 pounds. With a plant that can maintain these temperatures the above working rules will prove all right.

The largest item of cost in raising flowers or vegetables under glass is the fuel. The cost of heating is therefore of the first consideration, and anything which will cut down the cost of fuel will prove of great benefit. Under modern methods of heating with steam and hot water greenhouse culture of plants has advanced wonderfully, and it is possible to raise many kinds of fruits and flowers in the middle of winter that could not be attempted under the old systems of hot air. The tendency to-day is to increase the height of the greenhouses, and this of course involves a greater expenditure for fuel.

The heat losses in either conservatory or greenhouse are considerable, especially through the laps of the glass roof and around the ventilators. There is, of course, a great amount of condensation on the surface of the glass forming the roof and walls, and this has an important action upon the general temperature. The method of heating greenhouses to-day is accomplished by circulating or turning the air within the room or structure. It is the turning circulation of the warm air which causes great condensation on the glass. In the early greenhouses the hot air flue method of heating was depended upon, and as a result one end of the place would often be so hot that plants were wilted while at the other end they were chilled with the cold air and their growth stunted. In addition to this they were often damaged by escaping gases. The abandonment of this type of heater and the adoption of hot water and steam heating immediately helped the commercial greenhouses.

The use of greenhouses and conservatories for private residences is steadily increasing, and even the small country home is often provided with conservatories where a few plants can be raised through the winter. The conservatory attached to the side of the house, usually on the sheltered sunny side, offers different heating problems to the detached conservatory or big greenhouse. The principal question involved in such a home conservatory is to design and construct it so that the heating can be connected with the heating plant of the living-house. This can be accomplished under certain conditions, and not under others. In the first place the conservatory to take its heat from the main residence plant must have a southerly exposure and be protected by the house on at least one or two sides. Furthermore it must not be too large, and the steam or hot water plant of the house must be large enough to carry an excess of heat units for ordinary emergencies. The extra piping and radiators installed for the conservatory might over-tax the heating plant so that neither the house nor the conservatory could be properly warmed. If the furnace is large enough to heat the house to 80 degrees in zero weather there is surplus heat enough to supply the few extra square feet of radiating surface in the conservatory. Before building an additional conservatory to the house it is well to consider the heating problem carefully, for this will be the most vital question in the long run. If a separate heating plant will be required the cost will amount to considerable, and if the heat drawn from the house is going to cool off the living-rooms in cold weather it is a doubtful expediency.



Glass Espalier Walls

By Jacques Boyer



IN THE cultivation of fruits on the espalier system, the trees and vines are planted along a wall of stone or brick, to which all their branches are carefully attached, so as to spread them out into a plane surface, and allow free access of light and air to every part. Ordinarily, the direction of the wall is determined by local circumstances, and the varieties of pears, cherries, peaches, apricots, apples, and other fruits which are planted along the wall, are selected with reference to this direction. Until very recently, if the wall was built in an east and west direction, so as to expose one face to the south, the other face was almost entirely wasted. In order to remedy this state of affairs, several fruit growers have conceived the idea of employing transparent espalier walls, through which the light of the sun can penetrate to the trees planted on the north side of the wall. Count Horace de Choiseul, in particular, has conducted a series of very interesting experiments of this sort on his estate at Viry-Chatillon, in the Department of Seine-et-Oise, and has obtained some very promising results. He built a glass wall 6½ feet high and about 60 feet long, extending in an east and west direction, and planted fifteen pear trees of the variety

"Winter Doyen" on each side, north and south. The bearing surface of the wall amounted to about 26 square yards on each side. The south side yielded 134 pears of a total weight of 91 pounds, and the north side bore 119 pears weighing 77 pounds, making in all 243 pears with an aggregate weight of 168 pounds. All of the pears were of particularly fine appearance, without blemishes of any kind, and it is a remarkable fact that the fruit which was gathered from the north face of the wall was even smoother of skin than that which was produced on the southern side. Each square yard of the glass wall produced nine or ten pears of an average weight of about 11 ounces.

Another experiment with glass espalier walls has been made by MM. Croux & Sons in their nursery at Val d'Aulnay in the Department of the Seine. The wall which they constructed also lies east and west, and consequently

presents northern and southern exposures. As the accompanying photographs show, the wall is surmounted by a glazed roof projecting on each side. Along each face of the wall were planted Calville apples, Winter Doyen, Passe-Crassane, and Directrer Alphonse pears, together with peach trees and grape vines, care being taken to place the same varieties on each side, in order to make the comparison easy and accurate.

In 1907 these trees and vines produced their first crop, in which no difference between the fruit produced from the north and south sides of the wall could be detected. The same result was shown by the crops of 1908 and 1909.

There is, indeed, little difference in temperature between the north and south faces, as the former is heated by the solar rays which traverse the glass, and the latter is cooler

than the south side of a masonry wall, for the very reason that some of the incident solar radiation is transmitted through the glass and consequently less is reflected and absorbed. This difference in absorbing power, however, makes the glass wall inferior to the masonry wall in the matter of warming the plants and protecting them from frost at night. A masonry wall absorbs a great deal of heat during the day and gives it out at night, but this effect is comparatively small



A glass espalier wall

in the case of a wall of glass.

In the matter of cost, there is little difference between the glass and the masonry walls. The cathedral glass employed by MM. Croux costs about \$6 or \$7 per linear yard of wall eight feet high, including the cost of the glazed roof projecting over both sides. A masonry wall of the same height would cost \$4 or \$5 a yard, and the addition of the glazed roof, which of course is equally necessary in this case, would raise the total cost to \$6 or \$7 per linear yard. More extensive and long-continued experiments must be made, however, before it will be possible to pronounce a positive opinion concerning the relative merits of glass and masonry espalier walls; but the work already accomplished is sufficient to show that the practical French gardener may continue to be counted on to furnish improvements in his field.



CORRESPONDENCE



The Editor of *American Homes and Gardens* desires to extend an invitation to all its readers to send to the Correspondence Department inquiries on any matter pertaining to the decorating and furnishing of the home and to the developing of the home grounds.

All letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this Department.

Problems in Home Furnishing

By ALICE M. KELLOGG

THE "DAISY FIELD" BORDER

"NOTICING in a descriptive article in your magazine for February, an illustration of a room with a picture border showing a field of daisies, I write to inquire for some particulars. Where and by whom is this border made? Would it be appropriate in a small reception room with a nine foot ceiling? What kind of paper would you suggest below the frieze? How could pictures be used?"—L. K. E., Trenton, N. J.

The picture border referred to was made by Birge & Company, of Buffalo, a few years ago, and is not now on the market. While there are similar decorations to be had, they would not suit a room of rather small dimensions, giving a closed-in effect instead of the more desirable appearance of space. As a border of this kind is really a continued picture it would be unwise to further decorate the walls with framed pictures. The most pleasing tone for a reception room of limited size is champagne printed in two shades of either the glazed or matt surface. Mahogany looks well with this color, and figured brocades, tapestries and moquettes will contribute a variation of color and design. Pictures, too, would lend an interest to a room that is too often stiff and unattractive.

INEXPENSIVE FLOOR COVERING

A correspondent who is slowly acquiring Oriental rugs for her home (Mrs. M. F. J., of Indiana) asks for some inexpensive floor covering for bedrooms until the time comes to lay hardwood floors.

Ingrain carpet in plain covers laid over a lining paper makes a neat and attractive foundation for small rugs. The carpet costs about ninety cents a yard, the lining paper ten cents a yard. With the flowered papers on gray grounds so much in vogue for bedrooms now, the gray filling would be an appropriate choice. With yellow-flowered papers, or green and blue colorings, an oak-toned filling could be used, and green, with pink and violet papers.

While the possession of Oriental rugs in meritorious designs and harmonious colors is an advantage to the home maker, there is much to be said for our own domestic rugs which this season show a marked advance, artistically, over former years.

IDEA FOR A WINDOW SEAT

An "Apartment Dweller," has a peculiar problem in her sitting-room, for which she asks a solution. "The only windows in this room," she writes, "are in the form of a bay—a wide center window, with a narrow one at each side. The recess is fitted with a seat, but this is twenty inches from the floor, and with a cushion of the usual height it would be impossible for comfort. Then, too, our apartment is on the twelfth floor and with the windows open it seems

a perilous place for a person to attempt to sit. Would you leave it bare? Or can you suggest any way to bring it into some kind of usefulness aside from a sitting place?"

With the conditions described, the built in seat may have a small handwoven rug laid across the top, and a jardiniere holding a foliage plant placed in the center. This will leave a space at either side on which books or magazines, sewing basket or smoker's tray may be kept.

INGLE NOOK IN A CLUB HOUSE

It has occurred to one of the committee on furnishing a Country Club house that the space around the cozy fireplace in the main room could be arranged for informal companies of ladies. This suggestion came through studying the illustration of inglenooks in *American Homes and Gardens*, but some further information has been asked for, to carry out the idea.

The angle of wall at each side of the fireplace may have a corner settle with a shelf along the top for holding some pieces of copper and brass. If the seats are boxed in they will make a useful receptacle for holding firewood. A "nest" of tables may be kept near the seats and a special low stand be in readiness for the tea-service. Two comfortable arm-chairs, a fireside rug, and seat pillows will complete the inglenook furnishings. A positive factor in the success of the inglenook is the coloring of the stationary fittings—fireplace facing and hearthstones, wood finish and lighting fixtures—which should harmonize with the tones in the curtains, pillow covers, rugs and wall decorations.

A DIFFICULT WINDOW

Three windows in a library are arranged in such a way as to make the problem of their curtaining more than ordinarily difficult. These windows are described as being close together but divided by six inches of woodwork. "The middle window," writes this correspondent (Mrs. T. R. E., of Ohio), "is forty-five inches wide, and those at either side are thirty inches wide. Above these windows are stationary transoms of colored glass in dark uninteresting colors. Now, I do not know if it is better to treat the transoms and windows as one entire window or as separate features. As the library is on the front of the house, I shall use thin net curtains over the glass to correspond with the other windows, but would like some suggestion for an over curtain for the winter months."

The best way to treat a window of this kind is to have a straight valance to cover the transoms, and hang two curtains under it, one at each side. If the material is to show a pattern it will not need any trimming. If a plain material is used, a tapestry border should be sewn along the lower edge of the valance and down the inner sides and across the bottom of the long curtains.

Garden Work About the Home

By CHARLES DOWNING LAY

KEEPING TENDER PLANTS THROUGH THE WINTER

C. L. R. asks several questions about keeping tender plants through the winter.

The best way for you to keep dahlia roots through the winter is to put them in boxes of sand in the cellar or in sand on the cellar floor. The sand keeps them from drying out too much. If the cellar is warm and very dry it may be advisable to water them once or twice during the winter and a covering of coal ashes two or three inches thick on top of the sand would keep the sand moist for a longer time. Celery should be buried in sand or earth in a cool cellar or it may be buried outdoors, but it is better to have it in the cellar.

Gladioli bulbs can be allowed to dry out, but should be kept from freezing. Cannas, tube roses, and other tender bulbs should be taken up as soon as the tops are killed by frost and treated as directed for dahlias.

The hardest part of growing bulbs in the house in winter is to keep them in a proper place before they are ready to be brought to the light.

In the city it is almost impossible to keep pans of tulip in just the right condition, because city cellars are almost always too warm and too dry.

Sometimes the pans can be put on the floor of the cold closet and covered completely with the buckwheat chaff that the bulbs come in, or with coal ashes. A layer of newspapers on top of the chaff or ashes will still further prevent evaporation and will keep out frost if the room is very cold. The pans must be looked at and watered at least once a month in any case.

The ideal root cellar has an earth floor and on that anything can be kept in good condition.

Tender hydrangeas in tubs should be kept moist and not too cold. A little frost will not hurt them as much as dryness, so if the cellar is dry see that they are watered frequently.

GROWING SHRUBS AND TREES FROM SEED

We are pleased to hear another echo of our suggestions, published two years ago in *AMERICAN HOMES AND GARDENS*, about propagating trees and shrubs cheaply.

This time our correspondent wants to know about raising them from seed.

Any tree or shrub except the freak horticultural varieties can be raised from seed, but it is not always the easiest way, though I think in every case it is the cheapest.

The seed should be gathered as soon as it is ripe, freed from its pulpy envelope or from its pod and planted at once in rows in a seed bed.

Some seeds, as the hawthorns, do not germinate for two years but most of them will come up the first spring and be ready to transplant the second.

This year there is a large crop of white pine seeds and as they only bear abundantly once in six or eight years this will be a particularly favorable time for grow-

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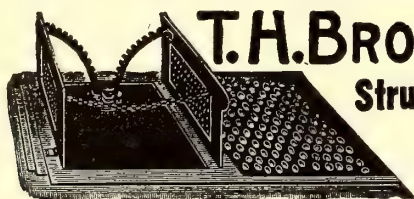
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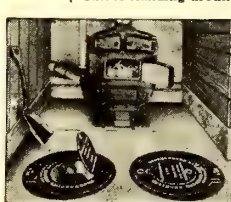
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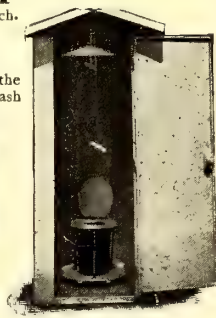
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"Ash Receiver. Note neat, clean appearance."



"A Sanitary Necessity for Camps."

ALCOHOL

Its Manufacture Its Denaturization Its Industrial Use

The Cost of Manufacturing Denaturated Alcohol in Germany and German Methods of Denaturization are discussed by Consul-General Frank H. Mason in *Scientific American Supplement* 1550.

The Use, Cost and Efficiency of Alcohol as a Fuel for Gas Engines are ably explained by H. Diederichs in *Scientific American Supplement* 1596. Many clear diagrams accompany the text. The article considers the fuel value and physical properties of alcohol, and gives details of the alcohol engine wherever they may be different from those of a gasoline or crude oil motor.

In *Scientific American Supplement* 1581 the Production of Industrial Alcohol and its Use in Explosive Motors are treated at length, valuable statistics being given of the cost of manufacturing alcohol from farm products and using it in engines.

French Methods of Denaturization constitute the subject of a good article published in *Scientific American Supplement* 1599.

How Industrial Alcohol is Made and Used is told very fully and clearly in No. 3, Vol. 95, of the *Scientific American*.

The most complete treatise on the Modern Manufacture of Alcohol, explaining thoroughly the chemical principles which underlie the process without too many wearisome technical phrases, and describing and illustrating all the apparatus required in an alcohol plant is published in *Scientific American Supplements* 1603, 1604 and 1605. The article is by L. Baudry de Saunier, the well-known French authority.

In *Supplements* 1607, 1608, 1609 we publish a digest of the rules and regulations under which the U. S. Internal Revenue will permit the manufacture and denaturization of tax free alcohol.

A comparison of the Use of Alcohol and Gasoline in Farm Engines is given in *Scientific American Supplements* 1634 and 1635 by Prof. Charles E. Lucke and S. M. Woodward.

The Manufacture, Denaturing and the Technical and Chemical Utilization of Alcohol is ably discussed in the *Scientific American Supplements* 1636 and 1637 by M. Klar and F. H. Meyer, both experts in the chemistry and distillation of alcohol. Illustrations of stills and plants accompany the text.

The Sources of Industrial Alcohol, that is the Farm Products from which alcohol is distilled, are enumerated by Dr. H. W. Wiley in *Scientific American Supplements* 1611 and 1612 and their relative alcohol content compared.

The Distillation and Rectification of Alcohol is the title of a splendid article by the late Max Maercker (the greatest authority on alcohol) published in *Scientific American Supplements* 1627 and 1628. Diagrams of the various types of stills in common use are used as illustrations.

In *Scientific American Supplement* 1613 the Uses of Industrial Alcohol in the Arts and in the Home are discussed.

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ing pines to plant on your wild land.

The oaks, too, are seeding well this year, and there should be no trouble in getting all the seed you want.

Seeds of trees which are hard to transplant like the oaks and hickories and pepperidge can be planted where the tree is to grow, or they can be planted in pots which makes them easy to transplant later on.

Barberries of all kinds are easily grown from seed, as are all the shrubs of the rose and apple family (*pyrus arbutifolia* and others).

Seed of the hackberry, pepperidge, oaks, birches and some maples can now be gathered, but it is too late for sassafras. Seeds of all the leguminous trees and shrubs (locust, coffee tree, etc.) can be found now and may be planted at once or kept until spring.

It is, of course, too late for tartaria honeysuckle and some others, but many of them still bear their ripened fruit and the seeds can be collected.

Viburnum, elder, aralia and innumerable other shrubs can be collected at almost any time through the winter.

It is a pleasure to grow things from seed and a great satisfaction to have plants in such quantities and at such small cost.

The time it takes does not matter much if your place has a start and is not absolutely bare. You will have many failures no doubt, because seeds are peculiar. The tulip, for instance, is said to be difficult to raise from seed collected north of New York city, and it seems in many cases as if the surest way to have them grow is to have the seeds eaten and dropped by birds or animals.

You will scarcely care to try growing rhododendron or laurel from seeds. It is quite possible, but the proper conditions for the germination and early growth of such small seeds are difficult to provide outside of a greenhouse.

The seed bed should have a good mulch of leaves through the winter, and it must be made mouse proof.

MATÉ PLANT, A TEA SUBSTITUTE

RECENT reports as to the maté plant show that it can be used as a substitute for tea or coffee. Different species of the *Ilex*, from which the leaves are obtained, are found in Paraguay, Brazil and Argentina, as well as in other regions of South America. The leaves are collected by the natives either from the wild plant growing in the forests, or from cultivated plants. After drying upon racks for 20 hours by a slow fire, the leaves are ground or crushed by using a stone or wood implement. The natives make an infusion of the leaves in about the same way as a tea infusion, using a calabash for the purpose. Although it is much employed by the natives of these regions, it appears to be little known elsewhere. However, efforts are being made in Brazil to put the product on the market in Europe, and especially in France. Analysis shows that it contains tannin, one or more kinds of saccharine matter, salts, etc.; also caffeine, to which is due its special properties such as we find for coffee and tea, so that it is to be classed along with these. As to the physiological effects of the infusion, these are about the same as are produced by tea. The maté has about 2 per cent of caffeine, which is somewhat less than tea contains. It has an agreeable aroma and a pleasant taste, although somewhat bitter. The infusion is made very easily by pouring on just enough boiling water to moisten the leaves, leaving for a few minutes and then adding the rest of the boiling water. From 10 to 15 minutes is enough for the infusion.

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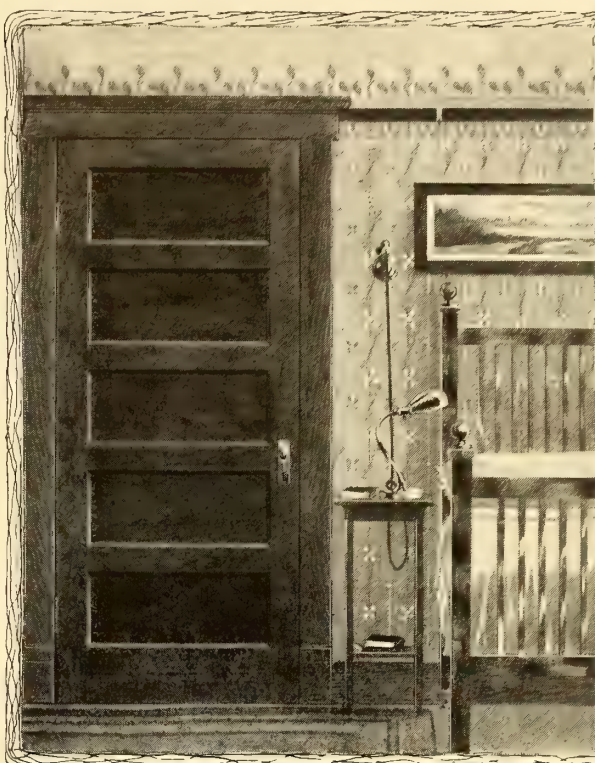
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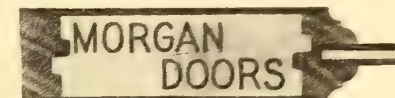
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Scientific American Supplements 1510 and 1511 present a discussion by Clifford Richardson on the constitution of Portland cement from a physico-chemical standpoint.

Scientific American Supplement 1491 gives some fallacies of tests ordinarily applied to Portland cement.

Scientific American Supplements 1465 and 1466 publish an exhaustive illustrated account of the Edison Portland cement works, describing the machinery used.

Scientific American Supplement 1519 contains an essay by R. C. Carpenter on experiments with materials which retard the activity of Portland cement.

Scientific American Supplement 1561 presents an excellent review by Brysson Cunningham of mortars and cements.

Scientific American Supplement 1533 contains a resumé of the cement industry and gives some valuable formulae.

Scientific American Supplement 1575 discusses the manufacture of hydraulic cement. L. L. Stone is the author.

Scientific American Supplements 1587 and 1588 contain an able paper by Edwin C. Eckel on cement material and industry of the U. S.

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PAPER FROM GRAPE VINE STEMS

BY DR. ROBERT GRIMSHAW.

ALTHOUGH the grape industry is not one of the principal sources of wealth of America as it is in Germany and France, still the possibility of using waste material such as grape-vine stems should not be without interest in the States; and this possibility is offered by an invention that is giving the French and Germans great pleasure, especially as at the present time the wine industry is languishing in both countries.

Mons. Chaptal, professor of general and applied chemistry in the agricultural school at Montpellier, has been making extensive experiments concerning the possibility of making paper out of vine-stems. This is all the more welcome, as the supply of raw material for paper-making is getting scarcer every year.

From the botanical point of view, the vine differs from ordinary tree branches only in a few unimportant details. The amount of cellulose in the two is about the same. For the manufacture of paper any substance can be employed which may be changed partly or wholly into fibers and form cellulose, and the fibers of which are sufficient. Concerning his experiments with the vine, Chaptal says he cut the dried stems into pieces of convenient length and treated them with hot diluted aqua regia (nitromuriatic acid). The resulting product he triturated slightly with water and passed it through a sieve, obtaining a brown pulp composed of spindle-shaped fibers of cellulose of different but sufficient lengths. Treating the stems with alkalies gave about the same results. According to these experiments there can be obtained from dried stems, by suitable reduction in size, a product which answers all the requirements of a good paper pulp.

As regards the industrial and economic side of the question, La Nature gives some data concerning the comparative values of the different raw materials in France. The wood employed for paper-making, mostly fir, birch, aspen and sycamore (platana), costs Fr. 7.00 per cubic meter, or Fr. 2.00 per 100 kilogrammes. Assuming that the vine stems yield 50 per cent as much paper pulp, in proportion, as the wood, their worth would be at least Fr. 1.00 per 100 kilogrammes, which would correspond to Fr. 15 per hectare of vineyard.

The cost of manufacture would probably be higher than in the case of wood, as there would be more raw material required for an equal weight of pulp. As against this, the treatment of the vine-stems seems to be attended with less difficulty, and therefore to be more economical than that of wood; so that the total cost of manufacture would be in the two instances about the same, and the vine-stems should bring Fr. 1.00 per 100 kilogrammes. It would not, however, pay to transport them far, by reason of their low value in comparison to their bulk; so that the pulp must be made in the immediate neighborhood of the vineyards.

The manufacture of the pulp into paper would be about the same as in the case of wood pulp; but according to Chaptal's experiments the treatment with alkalies gives the best results. The bleaching of the pulp is best effected by chlorine.

The double advantage of the discovery or investigation—namely, the utilization of the vine-stems and the finding of a substitute for the rapidly diminishing supply of rags and other paper-making material—should make this subject of general interest.

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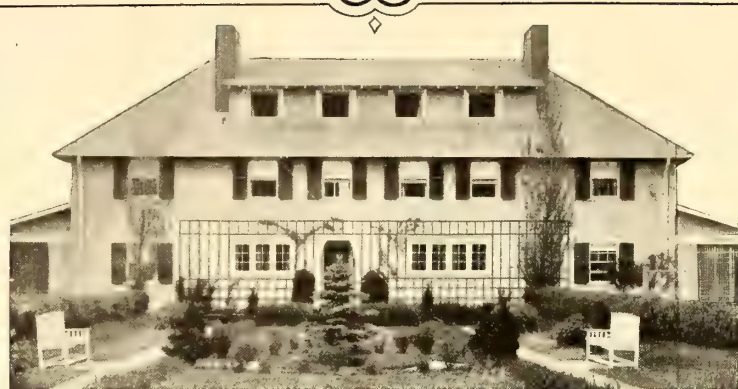
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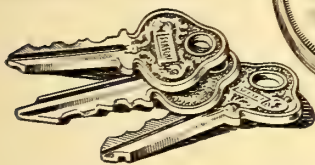
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MAKING MILK ARTIFICIALLY

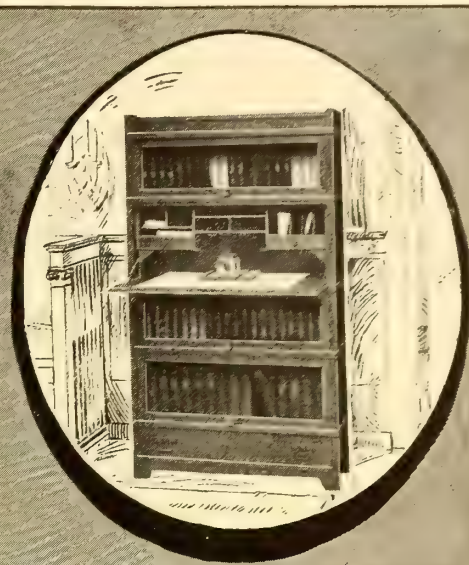
By A. J. JARMAN.

WE have heard so much about the synthetic production of perfumes, syrups, dyes, and what not, from coal-tar products, that we are not easily surprised by the information that milk may be artificially made. The method described below, however, is not a chemical one, but consists merely in the mechanical admixture of distilled water with crushed and finely ground sweet almonds. Practically the only difference between cow's milk and that made of almonds is that cow's milk contains animal casein, while the artificial milk contains vegetable casein. The latter will produce a good supply of cream, and if allowed to stand some time will become sour. It may also be coagulated by the addition of vinegar or acetic acid. When combined with grape sugar it is capable of generating some extraordinary organic substances. The artificial milk may be used with tea and coffee in the same way that cow's milk is used.

To make the milk, procure half a pound of sweet almonds—the Valencia, which is cheaper than the Jordan almond, will give just as good results. The skin of the almonds may be removed by scalding the nuts in boiling water, and peeling them with a sharp knife. The almonds should then be placed in a wooden chopping bowl and chopped as finely as possible. Take about two ounces of the chopped almonds, and place them in a mortar with a small quantity of distilled water. Then grind or levigate the chopped almonds, adding water occasionally, until about twelve ounces of water have been used. The longer the grinding is continued, the thicker and richer will the milk be. Now take a piece of cheese cloth about 12 inches wide by 24 inches long and rinse it in clean water, and after wringing it as dry as possible, fold it double over the top of a pitcher, and pour the contents of the mortar through the cloth into the pitcher. The milk may be squeezed through the cloth by wringing it gently, but it is necessary that care should be taken to prevent any of the larger almond particles from being forced through the meshes of the cloth.

If some of the milk thus produced is set aside for three or four hours, a thick layer of cream will be found on the surface. If too much water has been used in forming the milk, it may be necessary to add a little sugar of milk to sweeten it. The artificial milk has a slight almond flavor when taken clear, but this is practically lost when it is used with tea, coffee or cocoa. The color of the cream produced is quite pale, but it may be improved by using some of the almonds without the skins removed in the proportion of two ounces of whole almonds to six ounces of the blanched almonds. Care must be taken to prevent any bitter almonds from finding their way into the mixture, but one or two bitter almonds to half a pound would not affect the flavor of the milk.

Half a pound of almonds will make three pints of milk.



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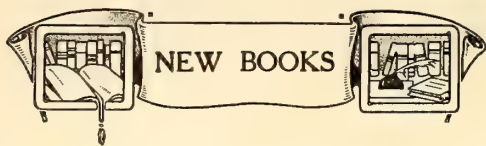
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NEW BOOKS

CONCRETE FROM SAND MOLDS. By A. A. Houghton. New York: The Norman W. Henley Publishing Company, 1910. 16mo.; 145 pp.; fully illustrated. Price, \$2.

In this little book Mr. Houghton has given a simply worded, thorough description of casting ornamental concrete objects from sand molds. In the rapidly widening use of cement and concrete, the lack of skilled workmen really competent to handle this new and plastic material renders the publication of such a book timely. The instructions given are so clear that any man of reasonable intelligence and skill ought to be able to make sculptural objects if he follows them. The book does not presuppose any preliminary knowledge on the part of the reader. It assumes that the reader is entirely unacquainted with the principles of concrete casting, for which reason it should find favor with those to whom concrete and its many possibilities are new.

OUR SEARCH FOR A WILDERNESS. By Mary Blair Beebe and C. William Beebe. New York: Henry Holt & Co., 1910. 8vo.; 408 pp. Price, \$2.75 net.

This volume is an account of two trips made by Mr. and Mrs. Beebe into tropical wildernesses. The first was undertaken on a small Venezulean sloop with which they penetrated far into the unknown Mangrove jungles, north of the Orinoco Delta, peopled principally by monkeys, Scarlet Ibises, and huge Anacondas. This trip ended at La Brea—the great lake of pitch—at a most critical time, when the American company had just been ousted by Castro, and Venezuleans put in charge. The second search was in the Wilderness of British Guiana, where birds and animals, gold mines and Carib Indians all contributed continual interest and excitement. This pioneer exploration by an ornithologist and his wife reveals the tropics as far more delightful and bearable than the writings of most travelers would lead us to believe.

A WHITE PAPER GARDEN. By Sara Andrews Shafer. Chicago: A. C. McClurg & Co., 1910. 12mo.; 292 pp. Price, \$2.50 net.

This is indeed a sumptuous book with four beautiful colored plates which show remarkable technical excellence. There are other illustrations scattered through the book, which is beautifully printed and bound. A lover of gardens, shut up in the city, has here fashioned a garden on paper—a garden of the spirit in which every lover of blossom and green may wander any month of the year in any weather and find that spiritual rest, those sentiments and memories, that the garden ever has and ever will stand for and awaken. The book is divided into twelve essays, one on each month of the year, and reflecting in the first place the sentiments of an absent garden lover for her kingdom, it will be read with joy by possessors and exiles alike.

INDIAN BIRDS. Being a Key to Common Birds of the Plains of India. By Douglas Dewar. London and New York: John Lane Company. 16mo.; 228 pp. Price, \$2 net.

The object of this book is to enable those interested in Indian birds to identify them



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at sight. There are several good systematic works on Indian ornithology, but the systems presuppose that the reader has the specimen in his hand and is enabled to examine it leisurely feather by feather. To do this it is necessary to kill the bird in question, a procedure which gives pain to many and gives pleasure to very few. The method which the author employs is to classify birds according to their habits and outward appearance. Each bird has a color, and most birds possess some anatomical peculiarity, such as a crest, a long tail, long legs, etc. When the reader thinks he has located a bird, he should turn to the descriptive list which composes Part II of the book. This will serve to confirm or correct him in his identification.

THE INTERNATIONAL STUDIO YEAR BOOK OF DECORATIVE ART FOR 1910. London and New York: John Lane Company, 1910. 4to.; 258 pp. Price, \$3, net; postage, 35 cents extra.

The International Studio Year Book of Decorative Art is always a very welcome visitor. The volume before us appears in its usual sumptuous attire, the text being printed on an English finish paper, while the illustrations are printed on coated paper. The engravings are particularly well executed, some from architects' drawings, and some from photographs. The color plates are particularly interesting. The British country houses which are illustrated are of the most attractive type. Great attention is also paid to wall decorations, stained glass, and ceramics, as well as metal work. The German architecture and decorations also come in for a liberal share of attention, as do also the decorations in Austria and Hungary. The book will prove invaluable for architects.

THE CARE OF TREES IN LAWN, STREET, AND PARK. By B. E. Fernow. New York: Henry Holt & Co., 1910. 392 pp. Price, \$2 net.

The author may be well said to be the father of forestry in the United States, and those who have followed him are very deeply indebted for the splendid foundation which he laid. The book belongs to the American Nature Series. Written for amateurs by a forester, this conveniently arranged volume furnishes information such as the owner of trees may need. Trees in place may be rendered almost imperishable by proper care and attention and the author gives details of the best methods of caring for the health of trees, transplanting, combating diseases and insects, etc. There are systematic and exhaustive lists of trees and shrubs fit for ornamental planting, with helpful notes on their adaptations.

TAVERNS AND TURNPIKES OF BLANDFORD, 1733-1833. By Sumner Gilbert Wood. Blandford, Mass.: Published by the author, 1908. \$2.

In no small degree the tavern and turnpike story shapes and describes the social development of a town like Blandford, so rich in fact and incident, so the author concluded to publish this monograph before running the larger risk always attaching to the publication of the conventional local history, the circulation of which is necessarily narrow. Should this little volume meet with such response as to warrant the venture, it is the author's intention to follow it with another on the "Homes and Habits of Ancient Blandford." The book is a monument of industry and many of the illustrations which are given show bits of old New England.



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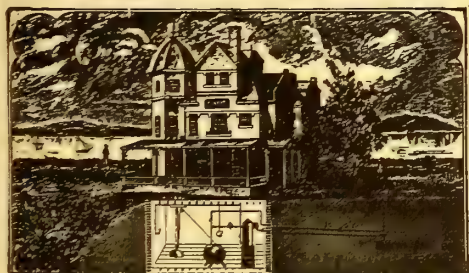
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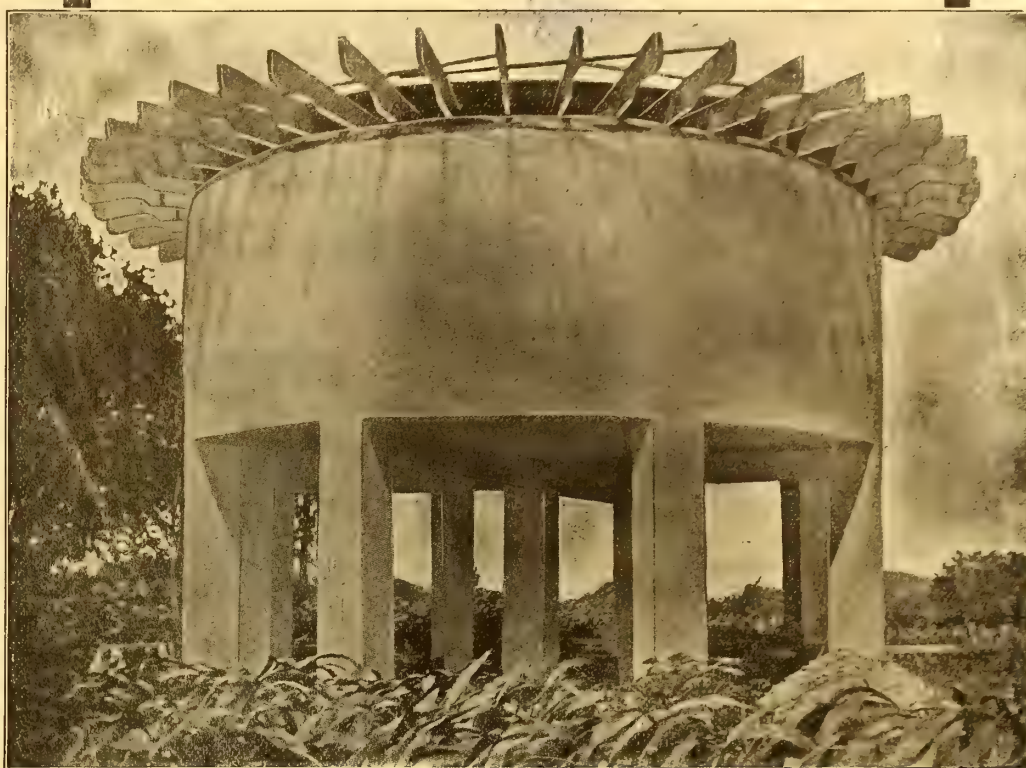
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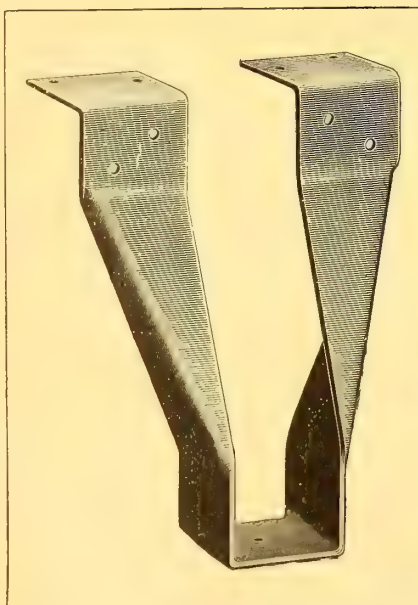
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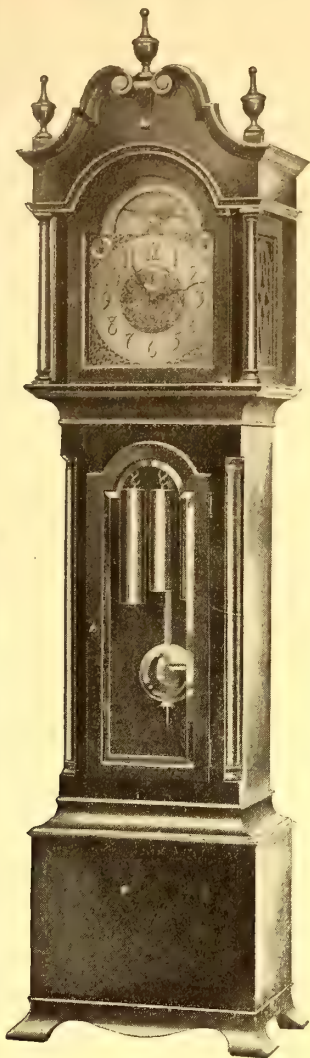
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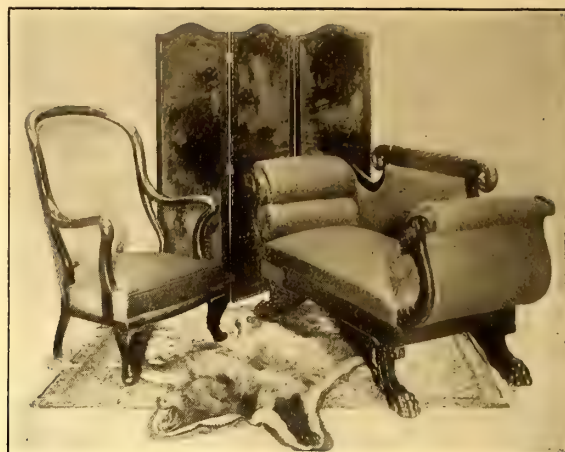
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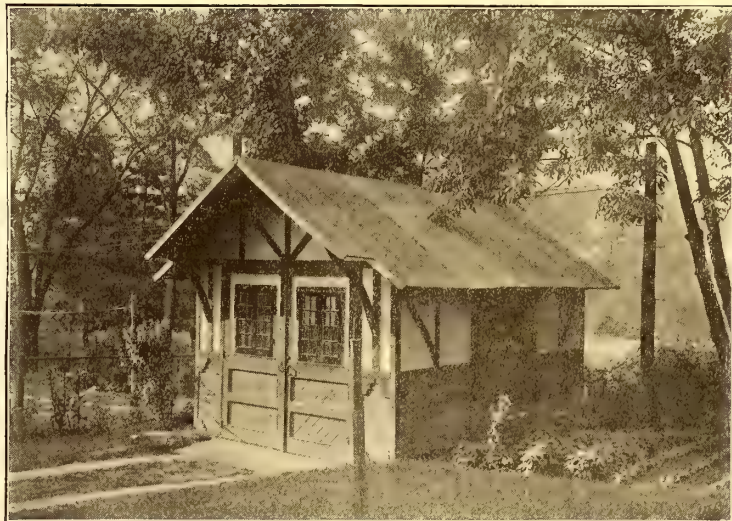
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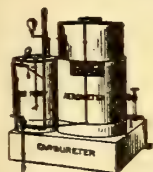
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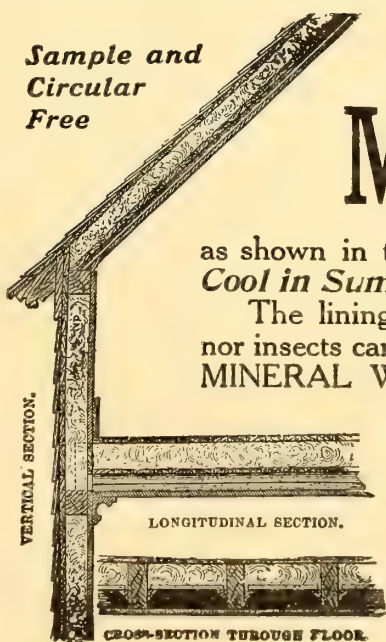
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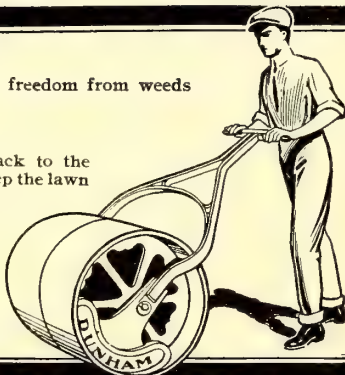
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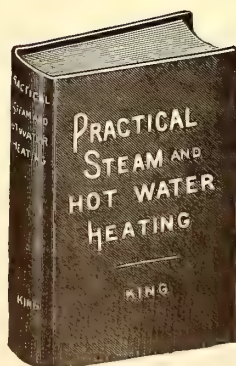
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The coating of iron and steel articles by dipping or immersion can be accomplished by a solution that must be made and kept away from strong light, but for copper and brass goods the following solution, which is not affected by light, will answer, and give a very good deposit:

Silvering Solution for Copper or Brass.—Distilled water, 20 ounces; bisulphite of sodium, 20 ounces. When dissolved add the following solution: Distilled water, 5 ounces; nitrate of silver, 520 grains. Be sure that the nitrate of silver is all dissolved. Add this to the bisulphite mixture and filter through absorbent cotton. The articles must be left in this solution for several minutes, then should be removed and be dipped several times in a 5 per cent solution of carbonate of soda, after which they should be washed and polished.

Silvering Solution for Iron and Steel.—Dissolve 1 ounce of nitrate of silver in 40 ounces of distilled water; stir this well with a glass strip or rod. Use neither wood or metal for stirring. Now make up a solution of hyposulphite of soda, 3 or 4 ounces in 6 ounces of water. Add very carefully a small quantity of this to the nitrate of silver solution and stir well. A brownish precipitate will form. Add a little more of the hyposulphite solution, stir again, and so on, until the solution becomes clear. Now add just a little more of the hyposulphite solution and the mixture will then be ready for use. Clean the articles well by first soaking them in a hot solution of common washing soda; rinse well; scour with pumice powder and a stiff nail brush, or for small articles a stiff tooth brush; rinse them and place them in the solution. The coating of silver from this solution is a moderate one. Silver can be deposited upon steel, brass and German silver by rubbing the solution upon the article with a soft sponge or a clean piece of rag.

Coating Zinc Articles with Copper.—Dissolve 5 ounces of chloride of copper in 4 ounces of distilled water. Add thereto, stirring all the while, about 7½ ounces of strong ammonia, and 150 ounces of distilled water. Make up a strong solution of cyanide of potassium, about 8 ounces in 20 ounces of water. Add this slowly to the blue solution of copper; in fact, add only just enough to disperse the blue color or nearly so. Clean the zinc articles thoroughly and immerse them in this solution. They will receive an excellent coating of copper, the coating adhering firmly to the zinc. If made slightly warm, the deposit will become increased. This is advisable in cold weather only.

The Deposition of Tin by Simple Immersion.—Take 18 ounces of ammoniacal alum and dissolve in 18 pints of distilled water while boiling. As soon as this is dissolved add one ounce of protochloride of tin. Stir this well while adding a little at a time. The articles to be coated must be thoroughly

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cleaned, as for silver plating, and then suspended on a soft copper or brass wire and moved about in the hot liquid. Articles so treated will quickly receive a fine white deposit of tin. To deposit this upon lead, iron or steel, also copper and brass, the following solution will answer well: Take 10 ounces of bitartrate of potash in 2 gallons of water, add three-quarters ounce protochloride of tin. Bring this solution to a boil, and in a few minutes the tin salt will dissolve. Clean the articles well and attach to them a piece of zinc. Then immerse and move the articles about in the liquid, when a fine deposit of tin will take place quickly. In some instances the articles will have to be scratch-brushed, or even burnished. When finished they will be found scarcely inferior in appearance to some silver-plated articles.

Depositing Gold by Immersion.—Dissolve in one pint of distilled water 2 ounces of hyposulphite of soda. In 3 ounces of distilled water dissolve 120 grains of chloride of gold; add this gradually to the hyposulphite solution, stirring well with a glass rod. The precipitate that forms by this addition dissolves almost instantly. Articles to be gilded in this solution must be thoroughly cleaned. Boil them for a few minutes in a solution of common washing soda, then rinse and scour with fine pumice powder, or scratch brush them, always taking care that the hand which holds the article is dipped into the pumice powder so as to prevent any trace of grease from coming into contact with the article. When scratch-brushing must be resorted to, it will be found to be a good plan to wash the hands well in a weak solution of carbonate of ammonia, and then rinse them in clean water. This operation will prove quite effective in removing the greasy matter which usually accompanies free perspiration. It also corrects any trace of acidity of lactic acid that is exuded through the pores of the skin. Articles so cleaned can be suspended on a piece of copper wire, and moved about. Deposition quickly takes place, especially if suspended by a thin strip of zinc, or a piece of zinc wire.

It must be clearly understood that articles that have been coated with either silver or gold will not resist much wear.

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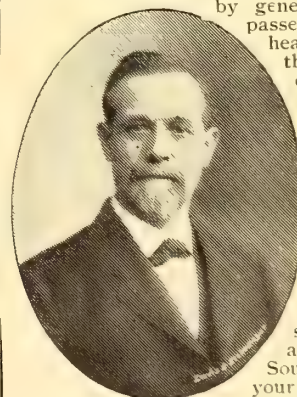
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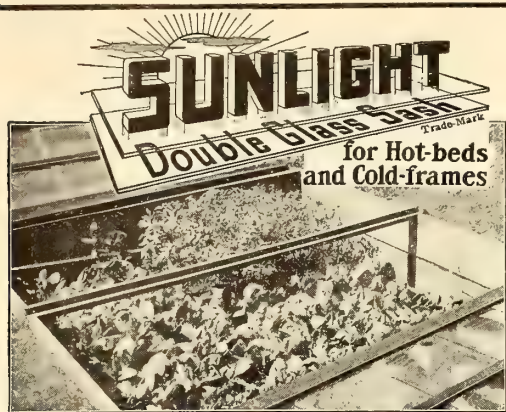
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AS is well known, the Academy of Sciences of Vienna possesses a very generous collection of phonograms. The commission in charge of these archives is now working zealously to increase to the greatest degree attainable the series of idioms and variations of dialects, and for this purpose is preparing delegations to all countries. The first of these will be for Sweden and Nubia. The proposed records, however, will not be made merely for purposes of culture and of the history of language; the commission has greatly enlarged the field of work of the phonograph, and has made of the instrument an indispensable inventory of acoustic science. In this respect the phonograph serves as an "acoustic microscope," so to speak, for small sections of the records on the plate are magnified a thousandfold, and so form an invaluable comparative material for the theory of the formation of sound and speech and noises.

One of the latest results of investigation in accordance with this method may be mentioned as an instructive instance of the importance of this kind of microscopical study: who that has the finest aural perception is able to decide whether the "A" of human speech concurs acoustically with the "A" sound, with its astonishing similarity, which is uttered by the frog in its croaking tone? Here the observer in the absence of the aid of the phonograph is restricted to his sensibility and is exposed to subjective errors, and for this reason such investigation must lack an exact basis. But such tonal emission magnified a thousandfold shows promptly that the "A" sound of the frog is intermitted at brief intervals, a fact which the human ear cannot grasp under ordinary circumstances, and that unlike the "A" of human speech it is a tone of interruption. From this point of view may be recognized also the keen importance this method has for the examination of pathological disturbances of speech, for instance, and for the differentiation of dialects even to their smallest details.

IN all atomizers for perfumes, etc., which are now in use the rubber bulb is detached from the bottle, with which it is connected by a tube of rubber or metal. In consequence of this arrangement, the apparatus is of ugly appearance and inconvenient bulk. In a new atomizer the bulb occupies a depression in the wall of the bottle, to which it is securely attached, although it can be easily removed and replaced by a new bulb, when it is worn out. The whole forms a smooth, round instrument, differing little in shape from an ordinary bottle, easily handled, and of graceful appearance. All of the parts: bottle, bulb, nozzle, and cleaning needle, are interchangeable and are sold separately.

REFERRING to the recent article in the SCIENTIFIC AMERICAN describing the damage done to trees and shrubs in connection with the tarring of the driveway of the Bois de Boulogne in Paris, a correspondent informs us that the authorities in Sioux City have recently discontinued the use of tar on the park driveways because of the damage done to grass, shrubs, and trees adjoining the tarred surfaces. Another correspondent has recently drawn attention to the fact that injury of this character probably results from carelessness in the application of the hot tar, the fumes from which are destructive to vegetable life.

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CHRISTMAS GREETING

AT this season of the year it is a good thing for us to thank our friends for the interest which they have shown in *AMERICAN HOMES AND GARDENS*.

The circulation of our magazine has increased with a normal, steady growth. The publishers feel gratified at this result, for it proves to them that *AMERICAN HOMES AND GARDENS* stands on its merits and not on the usual spectacular method so frequently used by publications of this kind.

The scope of the paper covers every appointment required in the home and the garden. It deals with home building from the design and the construction of a modest house, on a small plot, to the erecting of more pretentious homes on large estates. It treats of the decorating and the furnishing of the home, in every one of its details. It also treats of the best methods to pursue in the appropriate framing of the house by the practical knowledge given in the department of "Landscape Work about the Home," all of which have proven so helpful in the beautifying of the home and the garden.

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THE PACIFIC COAST HOUSE NUMBER FOR JANUARY

THE January issue of *AMERICAN HOMES AND GARDENS* will be devoted to the houses found along the Pacific coast. This is interesting owing to the fact that there is no part of the country where domestic architecture has been more artistically developed.

That American architects borrow suggestions from the architecture of other countries is evident. They have come to realize that they can find no better architecture from which to secure assistance in the designing of a house than that which the older civilization has given to us! It is pleasing to note that the western architect has been most successful in molding into form and modernizing the foreign type to meet American requirements. That they have attained this result is best illustrated by the many handsome houses which are shown in the engravings presented in this number.

AMERICAN HOMES AND GARDENS' GARDEN COMPETITION

THE editor of *AMERICAN HOMES AND GARDENS* takes pleasure in announcing the results of the Garden Competition which closed on the 15th of September.

One year ago, owing to the interest manifested in the Garden Competition held at that time, an announcement was made in *AMERICAN HOMES AND GARDENS* that the publishers had decided to institute a second garden competition for 1910.

The formal announcements were made, and the conditions published from month to month in our pages were quite complete and definite in the plan and in the scope of the competition. During the past few weeks a large number of contributions has been sent in to the Garden Competition Editor.

The subjects entered for competition were for the most part individual in character, and the decisions as to the award of prizes were, in consequence, easier than they otherwise would have been, had the gardens presented been laid out under the direction of a landscape architect. The award of prizes for the gardens was readily accomplished.

The roll of honor in the Garden Competition is as follows:

ROLL OF HONOR

First Prize, \$50

DR. SHIRO MIYAKI St. Louis, Mo.

Second Prize, \$25

MR. JAMES M. HULL Hamilton, Ontario, Can.

Third Prize, \$15

MR. M. F. AULT Indianapolis, Ind.

Illustrations of the prize gardens are published in this number and a very capable criticism of the decisions rendered by the judges is presented in a paper by the well-known landscape architect, Charles Downing Lay, in his department entitled "Garden Notes."

The sole object of this competition was not to secure material for *AMERICAN HOMES AND GARDENS*, but to further the love of gardening and to stimulate among its readers the desire for the improvement of the home grounds, thereby enhancing the beauty and the value of their surroundings.

If this is to be accomplished the editor will feel that the work of the publishers has been well rewarded, for he believes that there are endless possibilities in the small plots such as are to be found in the suburbs and in the villages, and that the result of the Garden Competition will be far reaching in the direction of this movement for the improvement of home conditions.

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Its Manufacture Its Denaturization Its Industrial Use

The Cost of Manufacturing Denaturated Alcohol in Germany and German Methods of Denaturization are discussed by Consul-General Frank H. Mason in *Scientific American Supplement* 1550.

The Use, Cost and Efficiency of Alcohol as a Fuel for Gas Engines are ably explained by H. Diederichs in *Scientific American Supplement* 1596. Many clear diagrams accompany the text. The article considers the fuel value and physical properties of alcohol, and gives details of the alcohol engine wherever they may be different from those of a gasoline or crude oil motor.

In *Scientific American Supplement* 1581 the Production of Industrial Alcohol and its Use in Explosive Motors are treated at length, valuable statistics being given of the cost of manufacturing alcohol from farm products and using it in engines.

French Methods of Denaturization constitute the subject of a good article published in *Scientific American Supplement* 1599.

How Industrial Alcohol is Made and Used is told very fully and clearly in No. 3, Vol. 95, of the *Scientific American*.

The most complete treatise on the Modern Manufacture of Alcohol, explaining thoroughly the chemical principles which underlie the process without too many wearisome technical phrases, and describing and illustrating all the apparatus required in an alcohol plant is published in *Scientific American Supplements* 1603, 1604 and 1605. The article is by L. Baudry de Saunier, the well-known French authority.

In *Supplements* 1607, 1608, 1609 we publish a digest of the rules and regulations under which the U. S. Internal Revenue will permit the manufacture and denaturation of tax free alcohol.

A comparison of the Use of Alcohol and Gasoline in Farm Engines is given in *Scientific American Supplements* 1634 and 1635 by Prof. Charles E. Lucke and S. M. Woodward.

The Manufacture, Denaturing and the Technical and Chemical Utilization of Alcohol is ably discussed in the *Scientific American Supplements* 1636 and 1637 by M. Klar and F. H. Meyer, both experts in the chemistry and distillation of alcohol. Illustrations of stills and plants accompany the text.

The Sources of Industrial Alcohol, that is the Farm Products from which alcohol is distilled, are enumerated by Dr. H. W. Wiley in *Scientific American Supplements* 1611 and 1612 and their relative alcohol content compared.

The Distillation and Rectification of Alcohol is the title of a splendid article by the late Max Maercker (the greatest authority on alcohol) published in *Scientific American Supplements* 1627 and 1628. Diagrams of the various types of stills in common use are used as illustrations.

In *Scientific American Supplement* 1613 the Uses of Industrial Alcohol in the Arts and in the Home are discussed.

Any Single Number of the *Scientific American* or *Supplement* will be sent for 10 cents by mail. The entire set of papers above listed will be mailed on receipt of \$2.00.

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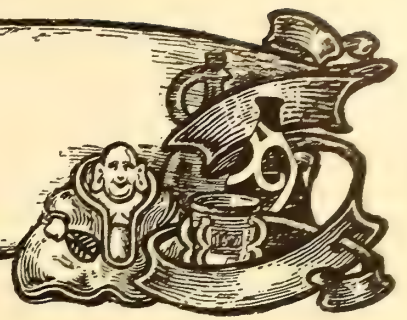
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American Homes and Gardens for January



Homes on the Pacific Coast

Paul Thurston, who is well known to the readers of the magazine, contributes a useful paper on some of the recent dwellings on the Pacific coast. They are houses of interest, too, dwellings that are well worth knowing about. The article is abundantly illustrated with photographic views of the interiors and exteriors, together with the plans from which a comprehensive idea may be obtained of them, by those who are interested in the subject.

Springtime in Winter

To the gardener, the cold months of the year must always mean a cessation in the active work of plant culture. Any scheme which will enable him to pursue his pastime during the winter will be sure of a welcome. The new method of bringing the branches of trees and shrubs into flower at this time, is one which promises to make a valuable addition to the resources of indoor gardening. Mr. S. Leonard Bastin tells in a unique and practical way how this may be accomplished and shows illustrations of the results.

Decorations and Furnishings for the Home

In the usual department devoted to suggestive ideas for the decorating and the furnishing of the home, Alice M. Kellogg will take up an unusual theme, in "The Treatment of Old-Fashioned Bedrooms." There are many collectors of antique furniture now-a-days who do not know how to correctly assemble, with their choice pieces, the suitable accompaniments in curtains, rugs and furniture coverings. In her department, Miss Kellogg will give the practical help required to meet this need, and will tell how many of the up-to-date furnishings can be harmoniously united with the old-fashioned furniture.

Improving the Breed of Goats

Certain breeds of goats possess special aptitudes for being modified in various directions by intelligent selection and judicious crossing. The experiments which have recently been carried out in France by Crepîn prove that the caprine species can be greatly improved in this way, and Mr. Jacques Boyer gives the reasons to show how goats may be bred for profit.

Sprays and Their Application in California

The fruit growers of the eastern states can secure a very good lesson from California in the plan and scope of its extensive and thorough system of spraying trees. Mr. H. A. Crafts has prepared an excellent paper on the subject. It is one that is filled with information and should receive consideration from the eastern fruit growers as well as from the owners of the smaller orchards which are to be found in many places.

An Interesting Application of Swiss Architecture to the American Home

There is no part where the development of Swiss architecture can be better adapted than in California or along the Pacific coast, where the climatic conditions are such that it easily permits of a treatment of the style in question. Mr. Charles A. Byers has prepared an excellent paper on the subject, and shows by

illustration the methods by which it is applied in the designing of a house. The specimen selected is particularly handsome and presents the Swiss chalet well developed in its character and outline.

The New Cretonnes and Taffetas

The use of cretonnes in the furnishing of a home has taken a rapid stride during the past year. There is a wealth of fabrics of this kind and the materials are now made in combination with the wall coverings so that the bedspreads and the curtains at the windows may match. Mabel Tuke Priestman has prepared an illustrated paper on this subject and offers many helpful hints as to how to purchase the fabrics, and their cost.

The Home of An American Sculptor

On the ridge of the Palisades in Santo Monica, Cal., rests the home of an American sculptor, Felix Peano. The house is an exceptionally interesting one, and was designed and built by the sculptor. The article prepared by Burr Bartram describes it in a competent manner and the many engravings show a striking structure which is most unique in its detail and execution.

The Two Hundredth Anniversary of Porcelain

An interesting paper by Charles A. Brassler on the invention of porcelain by Boettger, forms one of the leading articles in this number. Mr. Brassler tells the story of how Boettger, two centuries ago invented the process of making porcelain. It was in the little town of Meissen, in Saxony, that the inventor instituted an industry that has taken a commanding place among the most important art interests in Europe. The story of this invention, which the anniversary commemorates, is of sufficient concern to all ceramists and those interested in the development of the useful arts, to merit the devotion of the space given in these columns.

Electric Lamp Heating and Cooking Devices

Mr. Frank C. Perkins writes interestingly of the development of electricity for use in heating and in cooking, and shows by illustrations and drawings a unique electric heating and cooking apparatus which uses incandescent lamps for supplying the necessary heat. This is an excellent article and is one that will be of interest to those who are considering the use of electric appliances for this department of household utilities.

The Romance of Orchid Hunting

Twenty-five years ago the orchid was practically unknown in America, except to the botanists and collectors, but during the past decade its cultivation in this country has grown into an important industry. Within a few miles of New York there are eight orchid growers who cut from the plants in their greenhouses about three hundred specimens a day to meet the constant demand for this beautiful flower. Mr. P. Harvey Middleton has prepared a very interesting paper on the subject, which is profusely illustrated by many fine specimens.



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CONTENTS FOR DECEMBER, 1910

AMONG THE FOOTHILLS OF THE CANADIAN ROCKIES	<i>Frontispiece</i>
THE COUNTRY SEAT OF HOWARD HENRY, ESQ., AT CAMP HILL, PA., By Francis Durando Nichols	455
THE ART OF ORNAMENTAL ORANGE PEELING.....	By Harold J. Shepstone 461
DECORATIONS AND FURNISHINGS FOR THE HOME—X. Treatment of Fireplaces and Mantels, By Alice M. Kellogg	463
OLD SOUTH SALEM.....	By Theodore Langdon Van Norden 466
ARTISTIC WAX WORK.....	By Monica Bastin 470
A GROUP OF MODERN HOUSES COSTING FROM \$1,800 UPWARDS	472-473
HANDICRAFTSMAN—Leather Craftwork	By Catherine A. Jensen 474
CRAFTS THAT CHILDREN CAN DO.....	By Mabel Tuke Priestman 475
OSTRICH FARMING AS AN INDUSTRY.....	By Newton Forest 478
THE SMALL COUNTRY HOUSE— A Dutch Colonial House Costing \$2,150 Complete	By Paul Thurston 480
A CRAFTSMAN'S HOUSE COSTING \$2,400 COMPLETE	481
A HOUSE OF MODERN DESIGN COSTING \$3,200 COMPLETE	482
A HOUSE AND A GARAGE.....	By Robert Prescott 484
GARDEN NOTES	By Charles Downing Lay 485
AMERICAN HOMES AND GARDENS' GARDEN COMPETITION—First Garden Prize won by Dr. Shiro Miyaki, St. Louis, Mo.	486
Second Garden Prize won by James M. Hull, Esq., Hamilton, Ontario, Can.	490
Third Garden Prize won by M. F. Ault, Indianapolis, Ind.	491
The Editor's Note Book	Correspondence
New Books	American Homes and Gardens for January
	Index for 1910

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Among the foothills of the Canadian Rockies

AMERICAN HOMES AND GARDENS



Volume VII December, 1910 Number 12

The Country Seat of Howard Henry, Esq. at Camp Hill, Pa.

By Francis Durando Nichols



HERE are few more delightful sites than those which are to be found among the hills of Pennsylvania, and the temptation is to state that the site upon which Mr. Henry has chosen to build his house may not be the most important one among them, but he has, at least, obtained one of the choicest situations to develop a country-seat—a country-seat in every sense of the word, with an air of refinement

and repose, simplicity being the keynote to the whole general scheme.

A roadway leads in from the main highway through an imposing gateway to a court in front of the house. This roadway passes around a circle to the entrance porch, and then continues to the service end of the building, which also has a direct entrance from the highway. The court is enclosed on three sides by a high privet hedge which separates it from the orchard at the east front and from



The garden front

the service end of the building.

The entrance front, as well as the other three sides of the building, is so arranged and designed that each may be called "a front" on account of its being so sequestered from the highway. The house is planned in an absolutely simple manner, with perfect directness in every one of its lines and details, and is the work of Wilson Eyre, the well-known architect of Philadelphia.

Mr. Eyre has designed a long, low structure, two stories in height, with a low sloping roof, broken by simple gables and dormers, which adds to the house a third story.

The house is a plain rectangular building of rock-faced gray-blue stone, laid up in a random manner, and is almost completely covered with white cement mortar, which allows only part of the stonework to appear through the surface of the walls. The wood trim throughout is painted a soft brown, the sashes ivory-white, the blinds white, and the shutters green. The roof is covered with shingles and is



The entrance porch

stained a dull Indian-red.

The decorative features of the building are limited to the porches, bay windows and chimneys. To one side of the entrance porch the main wall is pierced by a long, staircase window. One enters the house with anticipation, since the exterior is so strikingly beautiful, and is not disappointed, for here one finds light and cheerfulness—a real home, with a homelike atmosphere.

The entrance is direct into a great living-hall, which occupies the main part of the first floor, and extends through from the front to the rear, or the garden side of the house. The walls of this room are tinted a soft mustard color, and the trim is finished in an old ivory-white. The ceiling is beamed. At one end of the room there is a large open fireplace with a paneled mantel extending to the ceiling. At the opposite end to the fireplace, there are three broad steps, which extend across the width of the living-hall, and ascend to a broad platform, from which the dining-room is reached,



A hooded gateway forms the entrance to the garden



Steps ascend from the garden to the living-porch

and also the staircase to the second floor. The staircase has white painted balusters and risers, and mahogany treads and rail.

The furniture of the living-hall is of good style and is comfortable. It is covered with chintz of the design of birds of paradise. Curtains of similar material are hung at the doors and windows; the whole giving an effective and cheerful tone to the general color scheme of the

room. A circular door with a circular head opens from the living-hall to the drawing-room. The walls are covered with a gray and white striped paper. The ceiling is white, is elliptical in form, and is paneled in a geometrical design. The feature of the room is the ingle-nook, in which there is an open fireplace furnished with tiled facings and hearth, and a mantel with an over-mantel extending to the ceiling. The walls of the ingle-nook have a similar wooden paneling. Broad seats are provided at either side of the fireplace. The wall space opposite the fireplace is occupied by built-in bookcases. The furniture is covered with a flowered chintz



The service end of the house

and the windows and doors have similar curtains to match. French windows open on to the living porch, built at the end of the house.

Stone steps lead from the porch to the rear side of the building. The dining-room occupies the same relative position to the living-hall as does the drawing-room. The wood work is treated in ivory-white. The gray and white paper which covers the walls is of a striped pattern. The side of

the room containing the open fireplace has two arched doorways, one leading to the hall and the other to a china cabinet. The fireplace is built of red bricks laid with broad white mortar joints. The mantel is in classic design and is in keeping with the style of the room. The service end of the house is complete in all of its appointments, and is furnished with every modern device for use in economical housekeeping.

The second story is divided into sleeping rooms and bathrooms. The owner's suite consisting of two bedrooms, boudoir and bath, occupies the greater part of this floor.



One of the vine-covered arches to the garden



The other side of the hooded gateway leading to the garden



The living-hall, showing the staircase



The drawing-room and its classic mantel



The dining-room



Another view of the drawing-room



A privet hedge encloses the garden at the rear of the house

The house front from the garden side, is more modest in design than from the entrance front. All the windows of the living-rooms open on to the garden, which extends across the rear of the building, and is enclosed in a closely

cropped privet hedge which rests on the edge of a grassed terrace. Broad vistas are obtained from the garden and the living-rooms, of the valley below and the surrounding country, through the clearing cut in the forest.



The living-hall, showing the fireplace



Fig. 1



Fig. 2



Fig. 3



Fig. 4

Fig. 1 shows the initial stage in making four slits at right angles from the top, but not quite to the bottom of the peel, beneath which the thumb is inserted to separate them from the body of the fruit. Fig. 2 shows how thin strips are cut from the sides of the four main sections, which are cut again from the top to the bottom, and from the bottom to the top, alternately, so as to form one continuous strip of small leaves, that with gentle pulling will lengthen into a goodly strip of peel. Fig. 3 shows how the strips can be converted into all kinds of artistic effects. Fig. 4 shows four plaited bands which are easily made, though care has to be exercised so that the chain will not break.

The Art of Ornamental Orange Peeling

Artistic Table Decorations made from the Rind of the Christmas Fruit

By Harold J. Shepstone



IT IS surprising what can be done with the conventional orange in the way of converting it into an artistic table ornament. Indeed, an almost endless variety of charming and delightful novelties can be created by the careful manipulation of the peel of this common fruit. Nor can the art of ornamental orange-peeling be described as difficult, and a few self-taught lessons will quickly convince one that here at least, is a unique opportunity for displaying novelty, taste, and skill in the way of decorating the Christmas table with an appropriate fruit. The tools required are of the simplest—a well-sharpened pen or fruit knife and a few small bits of wood, about the size of matches, the latter being needed to keep the peel in the desired place.

Any kind of orange will do, though it is as well to select those of medium skins. Having secured the oranges and the tools we now proceed to convert the skins of the fruit into artistic articles for the adornment of the table, or for the amusement of our friends. Here I cannot do better than to describe how the various creations seen in the accompanying photographs were made. Fig. 1 shows the first cut. It will be seen from this that the initial stage consists in making four slits at right angle from the top, but not quite to the bottom of the peel. The nail of the thumb is then inserted beneath the peel in order to separate it from the body of the fruit.

Fig. 2 shows how thin slices or strips are cut from the sides of the four main sections or leaves. These four leaves

must then be cut again from top to bottom, and from bottom to top alternately, but never quite to the end, so as to form one continuous strip of small leaves, that with gentle pulling will lengthen into a goodly strip of peel.

By a little manipulation and practice these strips of thin skin can be converted into all kinds of artistic effects, such as the ornamental device shown in Fig. 3 and the vase in Fig. 4. Running up the sides of the latter are four plaited bands or chains. These are easily made, though care has to be exercised or the chain will break. The remaining leaves or strips are then manipulated to form an appropriate finish which should be carried well above the orange. At first the design would appear to be a little intricate, but a few trials will reveal that it is not at all difficult.

Fig. 5 may be what is called a fancy piece of carving and is a little more difficult than the preceding designs. It is intended to represent a Japanese house-boat, with folding doors, and very pretty do these doors look, for they can be opened and closed at will, and give room for considerable amusement. Then all kinds of articles, such as crowns (Fig. 6.), faces (Fig. 7), loaves of bread (Fig. 8), and animals, such as pigs (Fig. 9), can be evolved out of the rind of the orange. All of these designs will be found fairly simple.

In the case of the crown it will be noticed that the greater portion of the fruit is left bare. First of all a number of leaves or strips were cut to form the base of the design. Then the remainder of the rind was peeled away with the exception of a narrow strip at the top. On this loose skin



Fig. 5



Fig. 6



Fig. 7



Fig. 8

Fig. 5 shows a fancy piece of carving in the form of a Japanese house-boat, and is more difficult to make than the preceding designs. Fig. 6 represents a crown with the greater part of the fruit left bare, while the crown is carved out of the peel at the top. Fig. 7 shows the human face, which is quite a simple design to make, and the only parts added are the ears. Fig. 8 is a representation of loaves of bread and cake, and is made by careful peeling.



Fig. 9



Fig. 10



Fig. 11

Fig. 9 represents the carving of a pig, which is realistic in the results attained. Fig. 10 shows a realistic and a life-like design in the carving of a serpent which is made by the pulling away of the strips after they have been cut. Fig. 11 shows oranges peeled in a similar manner to Fig. 10 and placed on receptacles.

the crown was cut, or rather carved. When the design was complete it was lifted well above the orange and fixed into position by bits of wire. The human face is quite simple. Indeed, the one shown occupied exactly three minutes in

represent the eyes, the wooden tusks and open mouth giving the finishing touches.

A by no means difficult design is that of the serpent, Fig. 10. After cutting the peel into thin strips it is gently pulled



Fig. 12



Fig. 13



Fig. 14

Fig. 12 presents a treatment of the orange similar to Fig. 11, but in a more elaborate manner. Fig. 13 shows a pyramidal centerpiece for a table decoration. Fig. 14 shows another table decoration in a manner similar to the preceding design, but massed in greater form.

the making. The easiest way to go about it is to first outline the face on the orange and then cut all the peel away. The ears, of course, are added. The piece of parsley certainly gives a realistic finish to the design.

In evolving the pig the rind of a second orange had to be called into requisition. The ears, legs and tail are simply pieces of peel fixed into their place by means of pieces of wood or wire. Then the head is also an addition. It is rendered realistic and lifelike by removing two small discs to

away from the body of the fruit. Here small strips of wood are needed to keep the peel in its proper place. Additional realism is added by giving the snake a more natural-

like appearance about the mouth by the insertion into the skin of a three-pointed piece of wire. Oranges peeled in the above manner and placed on suitable receptacles under a small square of white or colored fancy paper, form very effective and pretty decorations for any table. Figs. 11 and 12 are exam-

(Continued on Page 472)



Fig. 15



Fig. 16

Fig. 15 shows the third picture of the pyramid and its progress. Fig. 16 presents the pyramid complete, and it certainly produces a novel and effective decoration for any Christmas or festival occasion, and is one that can be easily made if one has the time.

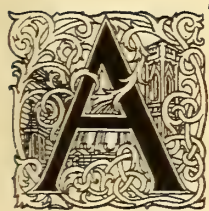


Decoration for a mantel

Decorations and Furnishings for the Home

By Alice M. Kellogg

X—The Treatment of Fireplaces and Mantels



THIS season of the year, and more particularly the holiday month with its indoor gatherings around the family hearth, the attention of the home maker is naturally directed to the details of the fireplace and the mantel.

From the historical and architectural viewpoint the fireplace has always been the most important feature in interior construction. Beginning with a simple opening through the roof as an escape for a fire built on the clay or earthen floor, the chimney of antiquity has gradually developed into shapely lines suited to its environment. The mechanical arrangements have kept pace with our modern improvements and progress has been made in the selection of materials. Design, too, shows the progressive spirit of the times.

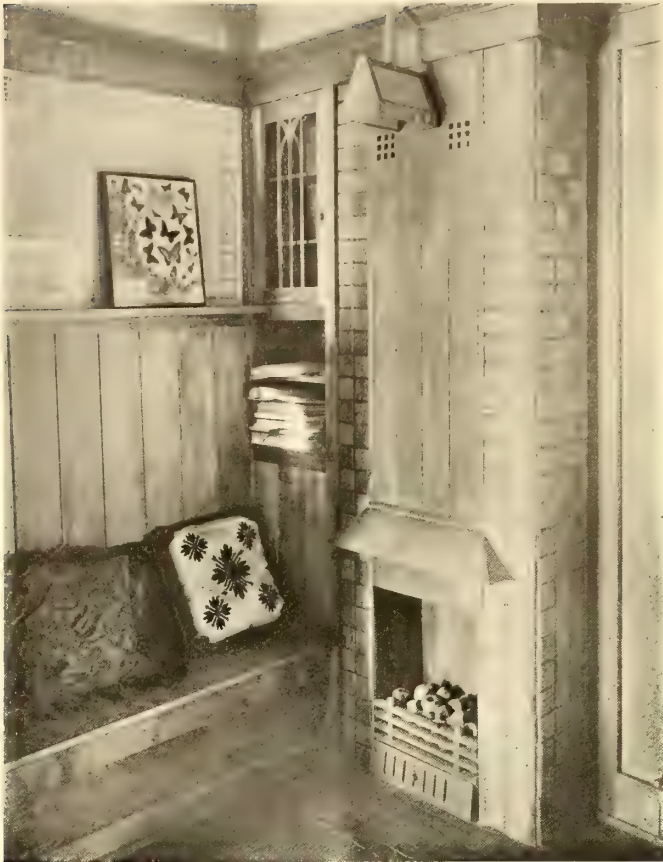
The permanent fittings, of a fireplace appeal to the prospective house builder, or the owner who anticipates or is already engaged in remodeling. The

movable furnishings interest that larger class who must adapt their belongings to every change of dwelling place. A more subtle problem is to bring the mantel and the fireplace into artistic relations with the rest of the room. This last has been successfully accomplished in the home of Mr. Edward S. Savage, Rahway, N. J., by the introduction of a garden scene executed in oil colors by Miss Isabel Whitney. The sketches for the completed picture were made in the flower garden of the owner, and combined in one composition to conform to the space to be filled over the mantel. The coloring was carried out in harmony with the color scheme already existing in the room in the rugs, hangings and furniture coverings.

The space above a mantel makes a strong claim for a treatment that shall be distinctive and consistent. Where there is much paneling in the room with open beams in the ceiling, the repetition of the panels above the fireplace is a natural sequence. (See illustration.)—Or, the woodwork of the mantel



A treatment distinctive and consistent



A quaint corner



Unusual and restrained

may be extended perpendicularly to inclose a favorite cast or decorative panel.

The over-use of decoration has never been more prominently displayed than in the mantel designs of a generation or so ago. The inevitable reaction effected a return to the austere lines of Colonial work, this being gradually modified by architects who kept the feeling of the old models while introducing some original expression.

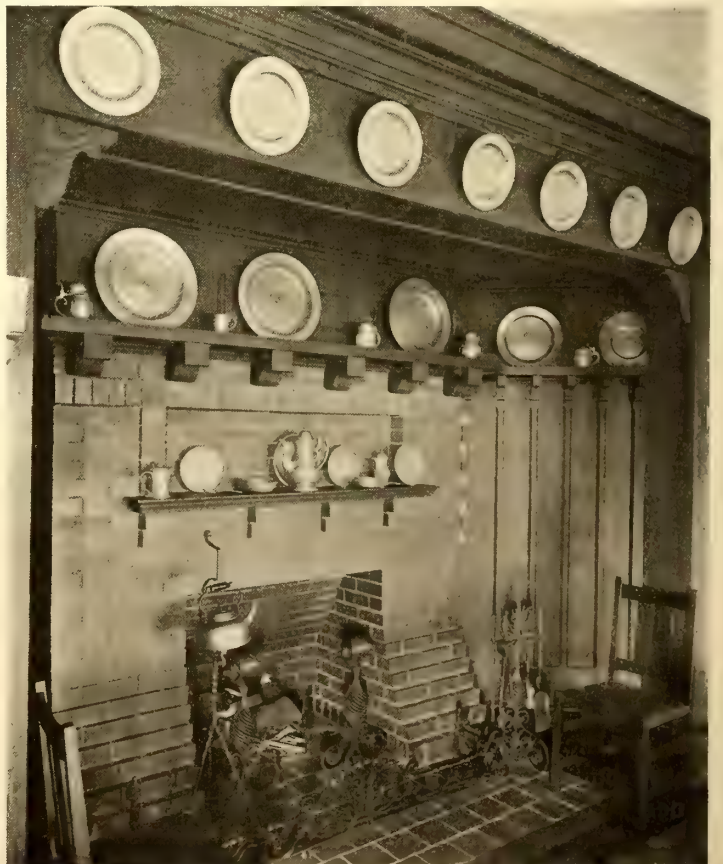
In some homes the nineteenth century fireplace atrocities are unfortunately still in evidence, with elaborate cabinet work built against the chimney breast and heavily-carved or turned supports under the mantel shelf.

To obliterate these in their entirety is seldom possible (particularly in a rented house), but a partial improvement may be effected by removing the upper structure, and hanging in its place, a picture strong enough in the element of interest to take the attention away from the unpleasing detail below. Such a plan was followed in the parlor and dining-room of a city apartment where cabinets and shelves fitted the space between the mantel shelf and the ceiling. When these features were taken away the walls, floors and furnishings appeared in their true proportions.

A fireplace design that suits the lines of the room, with enough decorative detail to hold the interest, is a per-



A paneled over-mantel



Pewter decoration

manent and satisfying furnishing for a room. Sometimes a high mantel shelf is chosen with good results, as in one of the illustrations, where a collection of old pewter is displayed; but the ordinary height from the floor renders the interior more homelike and less formal.

Whether the fireplace is to be of bricks or stones, or a combination of wood and tiling, is a question that is usually settled by the relative costs and personal preference of the owner. In a bungalow or summer camp built in a rocky locality, the fireplace of selected stones found in the vicinity is a happy choice. A wide slab of wood may be the mantel shelf, with the space above filled with stonework, wood or plaster.

Brick fireplaces of good design are now sent out from the factory marked for setting by a local mason. These are helpful for homes at a distance from architects or interior designers.

When an architect is employed to create an individual design for his client, the fireplace receives as much attention as any of the exterior details. The selection of the tiling is of great importance as it contributes or detracts from the general color scheme of the room. As an instance of this, a favorite shade of blue-green was adopted for the fireplace facing in a living-room without reference to any other colorings that might later on be assembled there. When the furniture and rugs were moved into the new home they were completely out of tune with the tiles and a general re-furnishing became imperative.

The fireback was, many years ago, a valued article in the equipment of a home, and was often taken out and carried away when a new dwelling was



A genuine Colonial mantel

erected. At Mt. Vernon there is an old fireback brought over from England by the Washington family. Nowadays, the fireback shows few variations in pattern, and bricks often take its place as a lining to the chimney.

Glazed tiles assert themselves more prominently than the dull or matt finish when placed around a mantel, and the preference is therefore in favor of the latter. The Grueby, Rookwood and Moravian tiles are notably good ex-

amples of what our own country can produce in artistic tiling, in both the plain surface and the decorated effects.

The arrangement and selection of mantel objects is an emphatic expression of the good (or bad) taste of the household, and garish colors, crude outlines, excessive ornamentation are in this position a constant target for criticism. To keep up the standard of refinement in the smaller details of the home furnishing, the mantel objects must be chosen with even more than ordinary insight.

In the dining-room a clock is often the necessary center for the mantel shelf. As this object gives many years of service, its selection will naturally be made with care and judgment.

The cases made of mahogany, with or without inlaid lines, accord well with dining-room furniture of mahogany and white painted woodwork. Colonial candlesticks in brass or silver, with colored silk shades, may have a place one at either side of the clock, with a piece of Japanese pottery to break up a too-perfect balance.

One of the most important features in decorating a mantel shelf is to eliminate ornaments of a personal character.

On a bedroom mantel one's favorite photographs of scenes or friends may be installed but in the more formal rooms of the home these may be excluded.



An old-time fireplace

Old South Salem

By Theodore Langdon Van Norden



NO metropolis in the world has at its very gates, a country more picturesque, more varied in aspect, and more touched with the magic of charm than that which lies directly north of New York. Westchester County, by reason of its hills, long remained primitive, and, an hour from the roar of Broadway, until recently seemed remote. White cottages characterize the countryside. And here and there a great house stands in wide stretching grounds, reminding one that Westchester, for all its quiet, or because of it, has been for over a century a favorite residence for New York families.

Near its northern border stands one of the county's most charming villages. South Salem merits the adjective "old" because it is now two centuries since the white man established himself there and the village has, in its small way, been a sharer in many and varied events. As early as 1640 the Indians sold the land to the pale-faced strangers, but there was no permanent settlement until the eighteenth century was a year old. In 1701 the great chief Catoonah, whose name survives in the village of Katonah, deeded the land all about South Salem to the inhabitants of Stamford, Connecticut. The purchasers this time made good use of their acquisition and from that year the history of the little village properly begins.

If history justifies the title "old," the village itself, in its clean, well-kept quaintness, picturesquely lives up to its reputation. With its prosperity and trimness there is happily little modern about South Salem. It would often seem as if this century of ours had inseparably linked comfort and convenience with ugliness, but here in the hills is a spot where progress has not spelled deformity.

The white houses line a shaded street. Each has its bit of garden, and each the air that marks a village. Over several of the houses hang signs, painted announcements of the character of the house, quite in the spirit of the past. The blacksmith's shop has a pole from which swings a picture of an honest smithy at his toil, and within the ancient little building the trade is carried on, as it has been on that same spot for one hundred years. Only, there is another sign which offers South Salem's shop to the Twentieth Century, and it reads: "Gasolene."

Another painted sign-

board announces "Entertainment." This is the inn of the "Horse and Hound," where meals may be had, and even a room or two if desired. It is a favorite place for motor parties, and many people of the neighborhood drive there for afternoon tea under its quaint old roof. The house is known to have been standing in 1799 and is probably much older than that. It belonged to the Keeler family, a name still prominent in conservative South Salem. The Keelers have in their possession a relic well considered priceless—a sword presented by La Fayette to Jeremiah Keeler at the siege of Yorktown. The boy was but seventeen years old when he joined the patriot army, and at Yorktown stormed the breastworks with so heroic a courage that his older fellow soldiers, catching his spirit, followed him in the face of a devastating fire, and carried the day. La Fayette after the battle made the presentation.

Many must have been the tales of battle and suffering told under the old roof which covers now so much good cheer. And it may be added that the French hero's sword is not the only relic of which South Salem can boast. Within a mile of the village too is the chair in which Major Andre wrote his famous letter to Washington, although the house in which the pathetic drama took place was, through carelessness, demolished many years ago. Andre, captured at Tarrytown, was taken to Lower Salem, as the little town was then called, and given in custody to one Colonel Shel-

don. Anderson he named himself, and his pleasing manner made friends for him among the officers. His roommate, Mr. Bronson, records that he amused the company by drawing caricatures until he asked for writing materials and wrote his manly letter to Washington, disclosing his identity. Washington, by the time the letter arrived, had full knowledge of the great conspiracy on foot and ordered Andre removed under a strong guard, but the famous prisoner had given South Salem its little niche in history.

Again in the street, one is confronted by a third sign. This stands in front of a small house and holds out the alluring promise of old furniture within. It is quite as good as its word, and might blazen forth the virtues of the shop it guards with a more clarion tongue, for the shop holds genuine furniture of other days.

When the traveler can finally turn from the study of mahogany curves and seek the sunshine again, if



Presbyterian church

there is a good South Salem guide there is time for anecdote on the way to the old Presbyterian church. For instance, the person who planted the elms along the village street had, what everybody needs to be agreeable, a favorite vice among his many virtues. It was not a very criminal vice, being merely a great love for tobacco, but it seemed considerable to him. At least he could not bring himself to face the fatal word in the book of his expenses and wrote it backward as "occabot."

Several of the parsons were characters, and one of the wives too. She longed for a new coat of paint for the parsonage and so told the trustees, who gravely pointed out that paint was a worldly vanity, beneath the notice of the pious. "Why," retorted the lady, "do you

wear two buttons on the back of your coat?" The trustee thus addressed could find no better reason than that the coat "looked better" so. The minister's wife drew the deadly parallel and had her house painted forthwith.

The Presbyterian church is like many other country churches, white and steepled. But few can show a graveyard so quaint, or a collection of deceased virtues so varied and impressive. From one of the earliest settlers who



Sign of the Horse and Hound Tavern

died in 1781 at the age of 83, and was "a person very Eminent to promote the gospel and the Publick good" down through generations, the admirable qualities of the villagers and their ghostly warnings to posterity stand arrayed to interest the antiquarian and the moralist.

St. John's, the Episcopal Church, is graveyardless, but it is so pretty a little stone building that it may be forgiven the omission. And it had a hard struggle through the years, for only within sixty or so has the service been read at South Salem since it was discontinued during the Revolution. And that, by the way, was an event that was dramatic and tragic. Mr. Epenetus Townsend was the priest when the revolution burst, and though he was on the wrong side he stood with a sturdiness that

commands admiration. Although a detachment of Continental soldiers, known to hate the church as well as the king of England, entered the little building one Sunday armed, the priest rose and began to read the collect for the sovereign as usual. Instantly the soldiers were on their feet with pointed bayonets, their officer bidding him to stop. He turned and left the reading desk, never to enter again. He was for some time a prisoner at Fishkill, and



The Horse and Hound Tavern

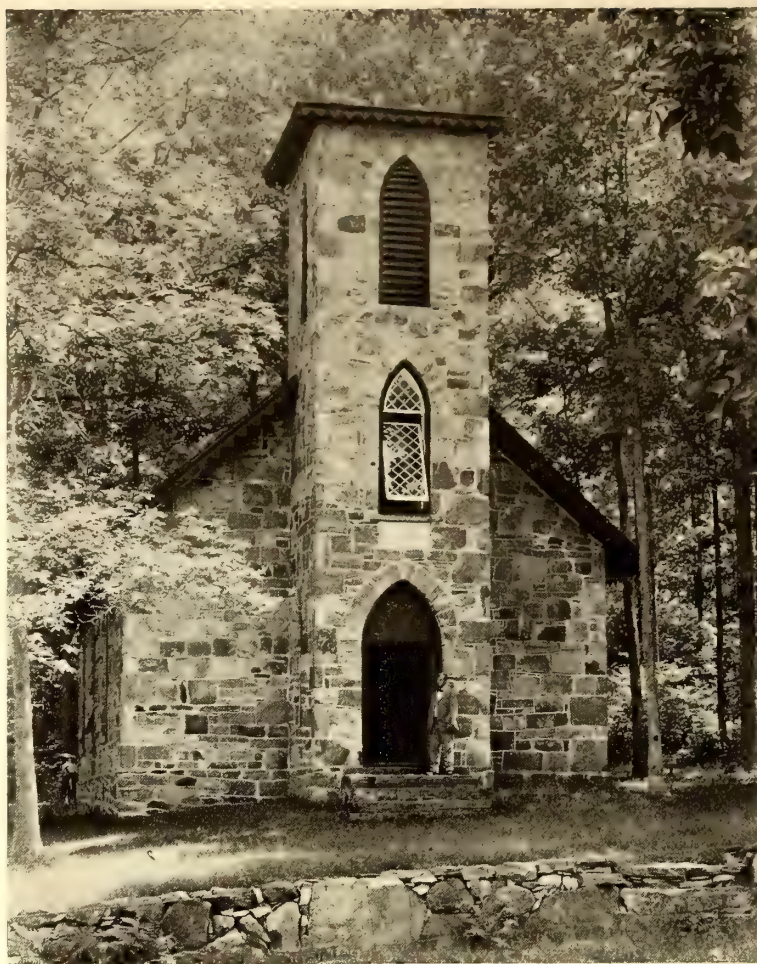
later, endeavoring to return to England, was drowned.

This is rather a sad tale for a stroll through a charming country village, and it is better to go out and look about on the peace of the fields and hills. There is Truesdale Hill, named for the first white settler, William Truesdale, who according to tradition was killed on that spot and scalped by the Indians—more gory reminiscence, but it cannot well be helped. Beyond lies Truesdale Lake, also named in his honor.

Of course Washington and his staff were dined in the vicinity of South Salem. Unfortunately the house was pulled down three-quarters of a century ago. But happily many of the old houses still remain, with their large stone chimneys and fireplaces, charming woodwork, and simple but pretty porches. A number of these have in recent years been bought by newcomers, who make their summer homes here, or keep them open throughout the year.

One of the most attractive and interesting of these now belongs to Mr. William Temple Emmet, on whose front door hangs the knocker of the founder of the village, one mile distant. Another is the house of Mr. Charles Roswell Bacon, the artist. And others belong to Mr. William H. Boardman, Mr. Richard S. Chislen, Dr. Ramsom S. Hooker, Mr. T. Ludlow Chrystie, Capt. Piper, Senator Agnew, and Mr. Walter Wyckoff.

Among those that have built upon the hills about the village are Prof. James M. Crafts, Dr. Ramsford, and Mr. Richard H. Lawrence. And Mr. Frederick Winant has enlarged one of the old houses. But many of the old families that have inherited their farms for generations still keep their homesteads, and their lives still give the village and its neighborhood their character, and the intercourse between these old families and the newer



The Episcopal Church

residents is pleasantly cordial.

Until very recently South Salem contained many inhabitants who had reached mature years before the building of any railway made their village a retired spot. In their early years a post rider came from Sing Sing once each week. Then the stage from New York to Hartford passed through the village twice weekly. And an old inhabitant could remember how all the farmers turned out after a snow storm to open the roads, or to take down the fences, so that the mail might be carried on, and any passengers to or from the city.

The old people could remember, too, the days of almost impassable roads and chaises, when the farmers commonly attended to their business at any distance on horseback. One anecdote of that period is of a rich but

penurious farmer, whose daughter wanted a new chaise. Upon her father's refusal, she threatened to tell the assessors of the amount of money her father kept from the tax list, and the chaise was bought!

In 1830 a carriage maker started his business in the village. A number of his sleighs are still in existence, originally painted bright red with a green vine border, inside bright yellow, and a yellow carved dash attached to the runners. And about 1835 the first two-horse carriage attracted the admiration of the village children. But one old lady would never drive, and always walked to church with her two servants.

South Salem had its witch in the past, one "Granny Brown," of whom tales still survive. She used the belief in her witchcraft to impose upon some of her neighbors. If she were refused buttermilk by any one, it was said that his cream would not ripen until a red hot horseshoe were dropped into it. One neighbor would not give the witch some yeast, and her bread did not rise during the



School house on Naarden Farm



The blacksmith shop



Coachman's cottage at Naarden Farm



A Naarden Farm cottage

following summer. And again, a farmer had a calf that acted strangely, and concluded that it must be bewitched, and according to the tradition of his time, he cut off a portion of the calf's tail. The next day Granny Brown

the place realize unusually how charming a spot is theirs and how necessary it is to guard it carefully. Thrift there is in plenty, but no desire to outshine other villages in innovation. Progress here takes the form of appreciating the



Porch of the coachman's cottage



A South Salem well top



Porch of a Naarden Farm cottage

appeared in the village with one hand bandaged and a finger gone. The farmer always believed that he had cut off the witch's finger.

But to return to the village of to-day. There is this about South Salem to make the heart glad: The people of

heritage of history and legend that has come down to the town, from generation to generation, and its present descendants are determined to keep intact the atmosphere of quaintness, the old-fashioned charm of South Salem.

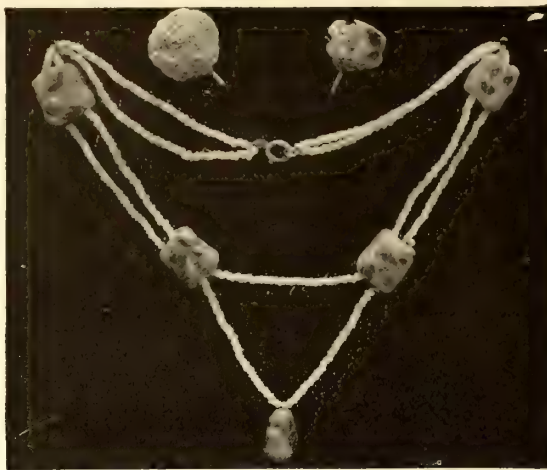


House of an old South Salem farmer



One of the cottages at Naarden Farm

Artistic Wax Work



A necklace made with sealing wax slabs and beads. Also two hat pinheads



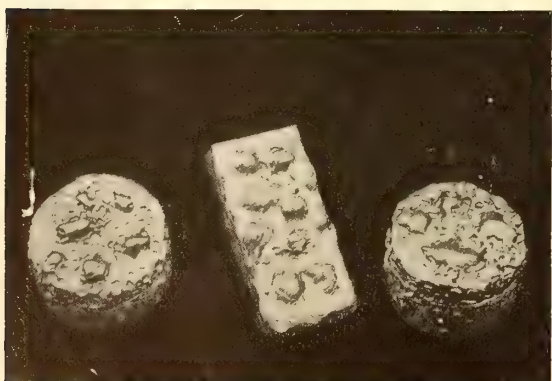
By
Monica Bastin



IN all the finer branches of artistic handiwork, originality, precision and a certain deftness of fingers are indispensable to striking success. With these and with the necessary foundation of talent, it is possible to turn the artistic sense (even moderately possessed) to very good account, and secure a result that will be of good taste.

Among the novel, and possibly the least exercised of such crafts, may be classed that of mosaic making with sealing wax. Although the idea is not quite unknown, yet it is not often carried out to its fullest extent. Not only mosaic jewelry may be taken as a pattern, but many kinds of metal work can be effectively copied. Added to this there are plenty of original schemes to be devised with the many shaded wax alone.

The first articles attempted by the novice may be the colored beads of various shapes and sizes so often threaded into bracelets and necklaces. The foundation of these beads is made with cork, one-eighth of an inch thick. The cutting of the cork is not very easy to an inexperienced hand. The best thing to use is an old, very sharp table knife, inserted with a sort of sweeping movement that will give a clean unjagged edge. The knife will probably require sharpening after every few cuts. The finishing touches should be made with the small blade of a sharp penknife. The sections should be cut rather smaller than is intended for the size of the finished beads. Having thus prepared a center on which to work, take an old hatpin, and stick the cork firmly on the end of it. Select a piece of sealing-wax of the principal color required for the bead, melt it over a clear flame, and cover one side of the cork at a time, allowing this to harden before the other is treated. Now remove the bead from the pin and see that both ends are properly covered. Each bead must be solid and well shaped. Any



Little pin or trinket boxes

little irregularities can be smoothed over by slightly reheating the wax in the flame. The bead can be decorated with spangled or metal wax according to individual taste; any device being carefully

picked out in tiny drops of wax, and then melted on to the background by again holding the bead close to the flame. When this is done, and the bead is of course quite cold and firm, heat a hatpin and pierce one or more holes through to the other side of the slab, and in the right position according to the design of the finished article of jewelry. This must be done with the greatest caution, or all the previous work will be spoilt. The holes, if not clean and carefully made at the opening, may block again with the half-melted wax. When the required number of beads are finished, thread them on a piece of wire and dip them one by one into gum Arabic sufficiently thick to coat each well. Wipe off any superfluous gum and hang them to dry. Then thread them after any fashion selected, interspersed with colored glass or metallic beads. The finishing touch is added by varnishing them with a picture copal varnish. This will take about two days to harden in a warm atmosphere before the beads are ready to wear.

The molding of hatpin heads may now be considered. From a plain, many-colored sphere to the most elaborate style which a large hatpin makes possible, there is an endless variety of design at one's disposal. The shape can be made over the round head of an ordinary hatpin. If, however, it is to be flat or after the fashion of a coin, it must be molded like the beads, over cork. In the latter case, the glass head can be broken away with a hammer, and the piece of cork of the required shape and size substituted. A very pretty rainbow effect can be obtained by dropping patches of colored wax on the head, until a rough circle is made, and then holding it close to the flame, turning it rapidly so that the colors run together. Continue this until the surface is quite smooth and glossy, and until the circle is regular. Then let the wax dry for a minute away from the flame, still turning the pin round and round,

so that it may not drop one side more than another. Finish it off by dipping it first into gum Arabic and then varnishing it after the same process used when making the beads. Yet another direction in which artis-



Piercing a bead with a hatpin

tic wax work can be employed is in the imitation of beaten metal articles. Gold and silver bronze of exact tint suitable can easily be obtained for this purpose. Any small boxes or trays will do for covering, though if they be of tin or some smooth material, the surface should be slightly roughened by rubbing over with sand paper before putting on the wax. Cardboard pill boxes will make pretty little pin cases. The inside and the edges can be brushed over

at the end. This is only one method of decoration. Landscapes or designs of flowers can be worked out with wooden instruments shaped according to the requirement of the various strokes. The boxes can be made to look as if they were inset with precious stones, such as turquoise, by dropping wax of the right shade in little lumps on the surface of the box before the metal is applied. Let these harden, and then surround them with the gold or silver wax in such



Covering a box with metal wax



Stamping out the boxes in imitation of beaten metal



Cutting the cork sections for the foundation of beads

with gold paint in order to hide all traces of the card. The sealing wax is first dropped on the box, and before it hardens, pressed with fingers previously dipped in cold water, until it is thinly spread. Then another patch is dropped and spread in like manner, and so on, until the whole of the box is covered. The wax is softened again by holding a lighted match or taper close to it. It is then dented all over in little circles with a piece of wood rounded

a manner that they stand up rather above the finished surface of the box.

Another rather novel method of ornamentation is carried out with odd shaped pieces of colored glass. They are placed at fairly regular intervals on the article to be adorned. The spaces in between are then filled with smooth strips of sealing wax, carefully laid so that the edges of the glass are completely concealed.

The Art of Ornamental Orange Peeling

(Continued from Page 462)

ples in point. So far we have only dealt with what can be evolved out of a single orange. By the employment of a number, all kinds of elaborate table-center decorations may be made.

Naturally, here certain accessories are necessary. The first essential is the formation of a suitable skeleton to hold the fruit. This can either be built of wood or made of wire. In the one shown, wood was used, principally because it was the most convenient material. A base in the form of a cross was first made. In the center was placed a long piece of wood in a vertical position. Then at the four corners of the cross were placed other pieces of wood, which joined the center one at about one-third of its length.

The next procedure was the covering of the framework with the peeled oranges. This demanded some little time and patience, there being no less than a hundred oranges in the completed design. Fig. 13 shows this pyramid centerpiece in its first stage. The oranges have all been carved

in one and the same design. In the first row they are placed side by side in an oval, and form the base of the pyramid. It is not necessary to place the "foundation" or "staging" in the middle of the structure until at a later stage. Fig. 15 shows the pyramid rapidly progressing. The center support has been firmly fixed into its base, and forms, as it were, the mainstay of the whole concern.

It must not be forgotten that as the process of piling up goes on, the various supports must be tied together by means of tape, wire and strong thread, whichever, in fact, is most handy, in order to give the whole structure its required stability. In Fig. 16 we have the pyramid, certainly a novel, artistic and effective decoration for any Christmas table, complete. Streams of smilax trail down its sides and maiden-hair fern peep out here and there, as also do little bunches of flowers which give the necessary touch of color. Then at the four corners of this masterpiece of orange ornamentation, on glass receptacles, stand fancy peeled oranges.





The residence of Mr. Warren Bartholf. Cost, \$1,800



A cobblestone house belonging to Mr. W. A. Westerson



A house built for Mr. Benjamin A. Paust. Cost, \$3,800



The living-room of Mr. Paust's house



A stucco house built for Mr. W. W. Huntress. Cost, \$3,320



The house of Mr. Benjamin Waller

A GROUP OF MODERN HOUSES



Mrs. Colgrove's house is constructed of stucco. Cost, \$2,040



The residence of Mr. R. E. McGregor. Cost, \$6,800



The living-room of Miss Holmboe's house



An interesting house built for Miss Helen J. Holmboe. Cost, \$4,950



The rear view of Mr. Waller's house



A stucco house belonging to Mr. Ellis Ashley. Cost, \$4,862



The residence of Mr. Warren Bartholf. Cost, \$1,800



A cobblestone house belonging to Mr. W. A. Westerson



Mrs. Colgrove's house is constructed of stucco. Cost, \$2,040



The residence of Mr. R. E. McGregor. Cost, \$6,800



A house built for Mr. Benjamin A. Paust. Cost, \$3,800



The living-room of Mr. Paust's house



The living-room of Miss Holmboe's house



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The rear view of Mr. Waller's house



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A GROUP OF MODERN HOUSES COSTING FROM \$1,800 UPWARDS

HANDICRAFTSMAN

Conducted by A. Russell Bond

Leather Craftwork

By Catherine A. Jensen



THE bookmark and the penwiper illustrated on this page were chosen with a view to giving beginners in leather craftwork some suggestions for simple but effective and useful articles.

Leather is perhaps the most adaptable material that the craftsman has to deal with, therefore being a most suitable one for the amateur.

With a little knowledge and feeling for design and color, and some experimenting, one can obtain beautiful results from this material.

Both of these articles are made of small pieces of leather and require neither stitching nor pasting.

Dark green Russian calf was used, but any other preferred color will do as well.

For the penwiper, decide the size desired, and with a compass draw two circles on the leather; then cut out carefully, directly on the line drawn. Reserve the most perfect piece for the upper portion, on which the modeling of the design is to be done.

Architects' tracing cloth is the best medium for transferring the design. After drawing the design on paper, carefully trace the design on the tracing cloth with a pencil. Then with thumb tacks, fasten the tracing over the leather (which should be slightly moistened with a sponge) and transfer the design on the leather with a tracing tool. An orange stick sharpened like a lead pencil makes an excellent tracing tool.

Now remove the tracing cloth and again moisten the leather. Then start to deepen and strengthen the lines of the design, meanwhile pressing down the background and thereby raising the design. Also make the outlines deeper on the underside of leaves and flowers, so as to produce a shadow effect.

If the leather roughens under the tool it is a sign that one is working against the grain of the leather. Always

move the tool with the grain. In some places the flowers and the leaves should be raised higher, to produce a plastic appearance. This is done by raising the design from the back of the leather with a circular movement of the modeling tool, under the parts to be raised, or the leather can be placed face downward on a small sandbag, and then the parts to be raised pressed down with the tool till the desired roundness is obtained. When the modeling of the design is completed, the background can be stamped with any of the stamping tools preferred, or else may be left plain.

The background of the penwiper shown in the photograph was stamped with a small dotting tool and the color lightened with a lighter color of gray green oil color, rubbed into the leather and then slightly shellaced.

Three circular pieces of chamois, somewhat smaller than the top of the penwiper, should now be cut and placed between the upper and the lower parts of the penwiper. Securely fasten all together in the center with strong silk thread, lastly fastening on the button.

The button adds greatly to the beauty of the penwiper and should be carefully chosen as to color and design. The one shown in the photograph is a handmade copper button, the copper contrasting very well with the green leather.

The illustrations in the head piece show a unique idea for a bookmarker. The ornamented brace holds four long thongs of leather which are to be slipped between the pages, the brace remaining outside of the top of the book.

This bookmark can be made in many varieties of outline and decorated in many effective ways.

Choose a stiff piece of leather for the brace and then draw an outline on it of the desired shape and cut out on the line drawn.

Draw the design to be used on paper and transfer to the leather as before described. Then moisten the leather



Modeled leather penwiper of simple design

and model the design, using the small tool and making the outlines distinct.

The background of this bookmark was carefully scraped with a sharp knife till the surface became lighter in color and of a velvety texture, against which the darker and smoother design stands out in effective contrast.

An Oriental button is placed as a jewel in the center of the brace, adding greatly to its effect.

Two narrow strips of leather (suede is best for this purpose) about twenty inches long are required for the

markers. Two narrow holes are cut, one on each side of the lower part of the brace, and in each hole one of the strips is pulled through to about half its length, a bead then being passed over the two ends of the strips and pushed up till it reaches the brace, thereby holding the thongs firmly in place.

At irregular intervals at the end of each thong, place two or more beads in groups, tying a knot underneath each group, to hold the beads in place. Indian or kindergarten beads are used for this purpose.

Crafts that Children Can Do

By Mabel Tuke Priestman



IT USED to be thought necessary for a child to show some natural bent for art before he was allowed to be taught any special branch. But, happily, this idea has melted away and we realize that every one has some latent talent which only needs to be developed.

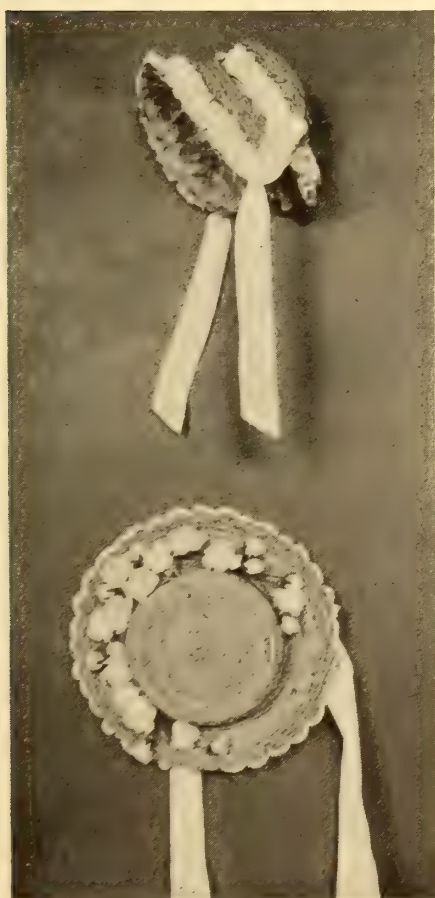
The old fashioned idea was that a child must be drilled in Historic styles as a basis of the foundation for design, but, the newer and better thought is that greater freedom of creation is given, if the child draws his inspiration from nature and the immediate needs of his environment. Every child has a right to the joy that comes from the knowledge and perception of the beautiful in nature, and too much care cannot be given to the training of the young to look out for "the good, the true and the beautiful."

It is, of course, necessary to first train the hand, the eye and the brain by teaching drawing in an up-to-date manner.

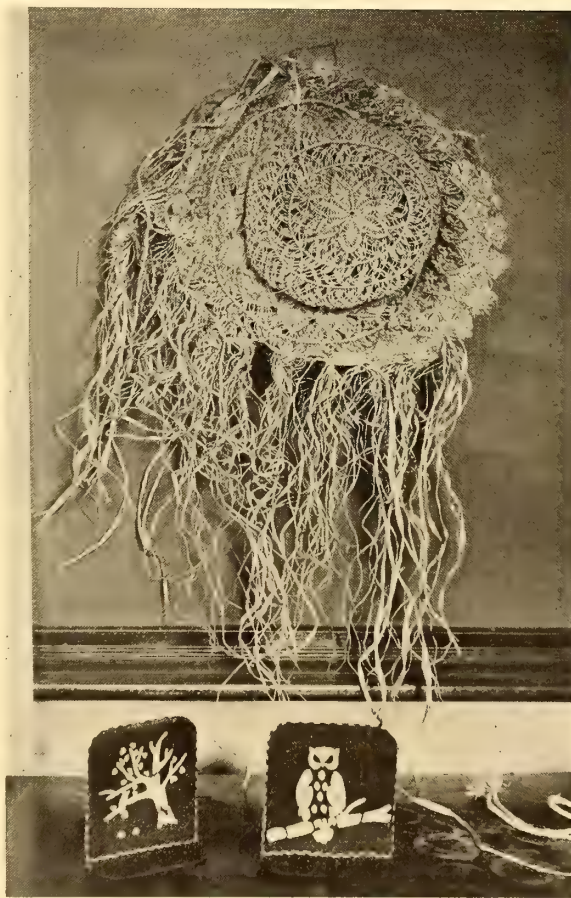
The child must draw what he sees and afterward reproduce it from memory. In this way it is impressed on his brain in a way it never could be if the model were always before him. This memory system teaches a child to observe—for, as he knows the object will later be removed, he tries to remember certain prominent features.

When memory drawing is followed by clay modeling and wood carving, it will be found that working in these mediums has developed the child very rapidly. For, the fact of making different forms in clay reinforces the drawing, while carving in wood reinforces the modeling, and, together, they teach originality and invention, as well as cultivating a creative capacity.

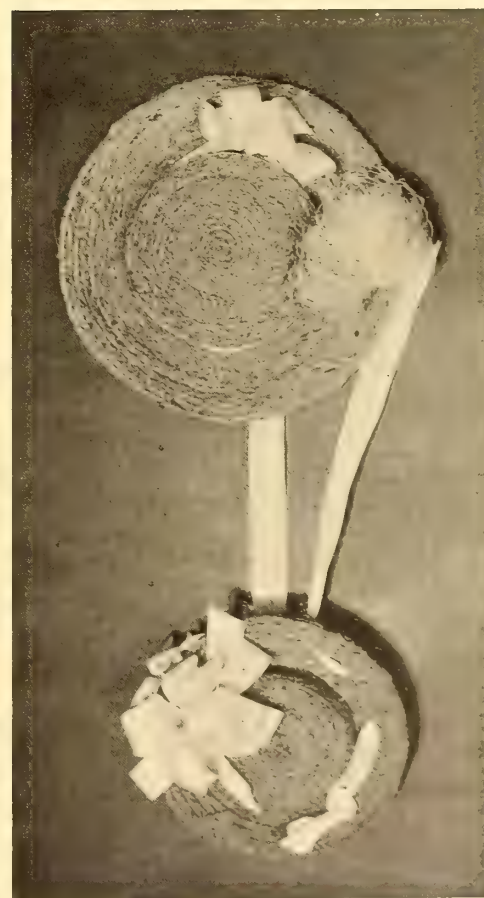
While working in wood, the child is taught to pay close attention to his work, and it also brings the muscles into play to cut and carve hard wood into shape. All the forces of the child are cultivated by these exercises. They should be the ground work of all art training.



A doll's bonnet and hat made by girls



Carved book racks made by boys



Two hats made and trimmed by girls



A girl weaving a rug



A hat in construction



A boy carving in wood

Constant change in occupation is necessary to keep the child happy and interested and he should never be allowed to work too long at a time at any one exercise, as he is apt to get tired and lose his interest in the technique of his work. A good teacher finds the best stimulus in work is to be happy, and this happiness comes with the actual pleasure of doing the work and in realizing what the object will look like when finished. The criticism of objects done by children should not be severe; the fact of making things is training the child, and, naturally, the work of very young fingers cannot be perfect. The making of perfect work is not the object, but the development of the child in the doing.



A girl modeling in clay

After wood-carving and modeling, basketry is one of the many occupations which should find a place in the child's course of study. Our illustrations show some beautiful specimens of basketry and raffia, all of which were made by children under six years of age at St. Agatha's School, New

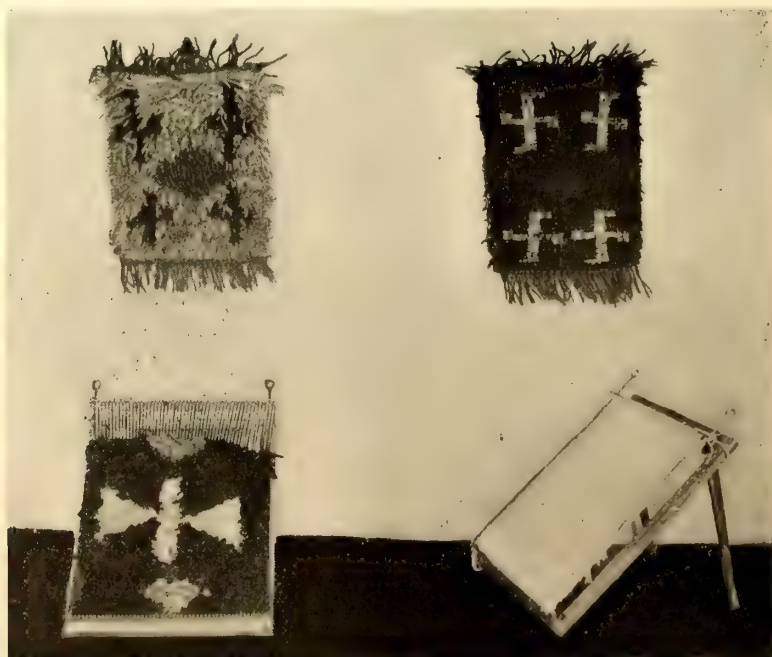
York city. The happiness that a child feels when it takes its first basket home to mother can only be appreciated by those who have seen him at work. It is found that boys enjoy basketry even more than girls, although, perhaps, raffia is best appreciated by the gentler sex, as the delight of making dollie a new hat never wearies a little girl. As basketry and raffia call for infinite patience, it is most important that the children be not kept too long at a time at this branch.

Simple weaving with raffia, or muslin, is an easy and enjoyable employment. The interlacing of material or raffia is simply a continuation of what has been taught in the Kindergarten work in plaited mat making.

The Todd loom is much used in public schools for teaching the fundamental laws of weaving. Not only can wash-rags be made from warp for the home, but all kinds of rugs for the doll's house from wool or warp; dolls' jackets, caps, and other small articles are also made. It has been



Baskets and bags made by boys



Todd easel loom used in the public schools

found that weaving is one of the best character formers of any of the crafts. In planning the design, a sense of color is cultivated, and perseverance and neatness are taught in the careful weaving of a tiny rug; and, as the children are trained to make their own designs, originality and creative ability are also brought into play.

When these crafts have been perfected, quite small children are able to take up the simple forms of working in sheet metal. Hammered brass has a fascination for the youngster, which may partly be accounted for by the noise made by the hammer, while the cutting of the metal with a fret-saw trains the eye to accuracy and the fingers to deftness.

Give a small child a sheet of paper and a pair of scissors, and he will need no other entertainment as long as the paper lasts. This love for snipping paper can be turned to good account if the child be shown how to cut out regular patterns, no matter how simple. The paper is folded upon itself a number of times, a few apparently meaningless slashes are made with the scissors, and then when the paper is unfolded it is found to take an unexpected form with lace-like pattern in the center. The unexpectedness of the design makes such

cutting very fascinating to the child. However, it is not a difficult matter to solve the mystery of the cutting. The paper pattern may be used as a decoration, for instance as a book plate.

It the paper be cut at random, new and attractive designs may be found which will furnish valuable suggestions for original stencil patterns. The accompanying engravings show a number of examples of stencil work. A detail of a wild rose pattern is given, as well as the method of applying it to the bedroom curtains and the bed cover.

The variety of decoration made possible by this method is endless. The same stencil may be employed in different ways, to vary the design. This is a class of work that anyone can take up to advantage.

When a child goes to school and the hand-crafts are not a part of the curriculum, it will be well for the parents to study a few of the simpler crafts, so that they can supply the deficiency.

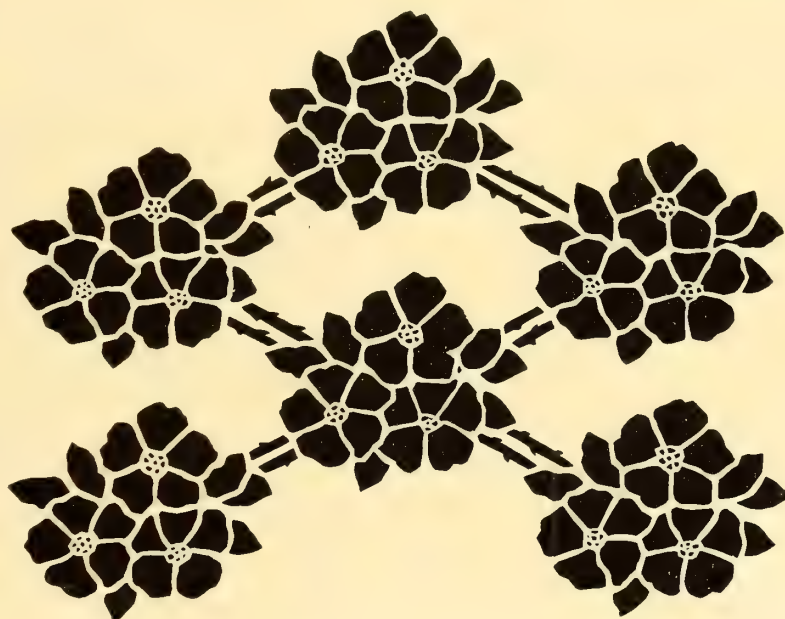
It is not fair that the child should suffer for lack of this training, for he will feel conscious and stricken when he finds his friends are able to make beautiful articles, for he will feel that he has been cheated out of his rights to compete with his comrades.



A stencilled curtain to match the bed cover



A wild rose pattern



A pattern for stencilling



A girl copying from a model



A stencilled bed cover



Ostrich Farming as an Industry

By Newton Forest



DOES ostrich farming pay? The question is asked by almost everyone who visits an ostrich farm. The answer is that when an acre of alfalfa will furnish a home for four birds, with food enough to maintain them throughout the year; when an ostrich will yield annually about two pounds of feathers, with an average value of \$20 a pound, and from thirty-six to ninety eggs, which may be used for incubation, or may furnish food at the rate of nearly four pounds to the egg, if the owner does not wish to increase his troop, ostrich farming does pay, and pays well.

There is nothing very lovable about an ostrich, as there usually is about other domestic animals. But, however lacking in personal charm it may be, the big bird is a money producer. A head of cattle eats sixty-five pounds of alfalfa in a day; an ostrich, ten pounds. This head of cattle at five years old is worth \$40, and an ostrich at that age is worth \$250. There is nothing to the cattle but meat. At ten months the ostrich will produce \$10 worth of feathers, and thereafter from \$35 to \$150 worth of feathers annually for a long period of years. Though an ostrich is matured at the age of five and is reproducing, its average life is about that of a human being. The bird does not begin to decline until it is fifty years old. Many, however, produce fine plumage at the age of seventy-five.

There is as much difference in the breed of ostriches as there is in any other animal. Some of the California and Arizona male birds are rated at as high as \$5,000 each, but ordinarily the value averages about \$400 for a one-year-old bird and about \$100 for a chick. Some of the cocks weigh as much as 500 pounds and stand over ten feet high.

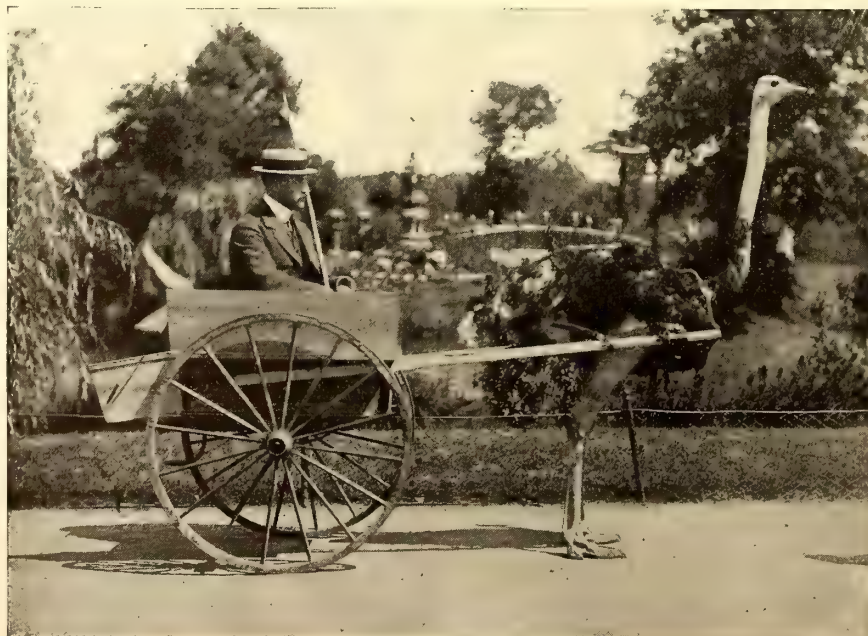
It has of late years been found that a great deal of money can be made in ostrich farming. Especially so where alfalfa or lucern can be raised on irrigated lands. In the Salt River Valley in Arizona there are about 250,000 acres of rich land, soon to be made richer and more productive through immense irrigation works on

which the United States is spending \$6,000,000. Such a climate is an ideal one for ostrich farming, as the farms in that locality have already proven by their successful operations. While the birds thrive best in a warm, dry climate, they can be grown in any of the southern States and Territories of this country. In a moist climate, however, they would have to be protected from cold and rain.

It is only a little more than two decades ago since the first ostriches were brought into the United States with the serious purpose of attempting their culture here. Before that time the only birds seen in this country had been adjuncts to circuses. To-day, exclusive of those in zoos, there are some four thousand birds on the American continent. Probably half of this number are the progeny of a single pair owned in Arizona in 1891.

The female ostrich matures much earlier than the cock, beginning to lay fertile eggs when she is about three and a half years old. The nest is nothing more or less than a hole scratched in the ground, which is done by the male bird. At first the hen may not take to the nest, but may lay her first eggs on the ground, whereupon the male will roll them into the nest. Generally, after the male has put three or four eggs into the nest, the female will take to it. She will then lay an egg every other day until about sixteen eggs have appeared in the nest. An ostrich egg is nearly eight inches long and about six inches in diameter. It makes a good omelet and is excellent when scrambled. One egg will make as much omelet as three dozen hens' eggs. A full-ground bird has been known to produce over three hundred pounds of egg food in a year.

An annual increase of about fifty per cent of a flock is secured mainly through the use of incubators, though on every farm a few paddocks are maintained, each for the sole occupancy of a pair of birds. Three times a year the hen begins to lay. She does most of her setting during the daytime, the male bird attending to that part of the household duties at night. He will usually go on the nest about five o'clock in the evening, and remain there until eight o'clock next morning.



An ostrich-drawn cart



Harvesting the feathers. The bird's head is covered

It is thought that the color of the sexes has something to do with developing these instincts. The male, being black, is not so easily seen at night, and the female, being drab or nearly the color of sand, cannot be readily observed on the nest in daytime. The male usually begins to sit three or four days before the hen stops laying. If the weather is cold during the laying period, the male will often be found covering the eggs at intervals during the night, to prevent them from becoming chilled. The birds are also very watchful in the warmest season to prevent the eggs from becoming superheated by the sun. The birds do this by resting on their ankle joints and spreading their wings umbrella-wise over the nest.

As is usually the case with all eggs in a dry climate, the shell of an ostrich egg becomes dry and hard. It is therefore very difficult for the chick to break through. When the time arrives for the liberation of the young, they are heard to chirp and to move in the shell. The parent bird seems to understand the situation, and

will often crack the shells with his breastbone, sometimes taking the young by the head and pulling it out of the shell. Sometimes four or five days elapse between the hatching of the first and the last egg. During this time one of the parent birds sticks to the nest while the other takes care of the chicks. However, on a well-regulated ostrich farm the farmer assists the birds in hatching by cracking the eggs with a small hammer and putting the unhatched eggs into an incubator.

The chicks appear to be all eyes and necks when they first come out of the shells, yet their bodies are as large as those of full-grown hens. They are as fuzzy and as soft as a day-old chicken, but far more stupid. For the first week of their existence nothing but gravel is given the young ostriches. Then they are turned into small pens in the alfalfa lots, where they are to eat alfalfa for the rest of their lives.

Plucking is the general term by which the harvesting of feathers is known. The term might lead one to believe that the feathers are pulled out. This is not the case, however, for that would injure the bird. The plumes are snipped off with shears close to the



A pair of birds and their eggs



A male chick just hatched by an incubator

flesh. The quills that are left soon die and drop out, after which new feathers begin to sprout. There are twenty-five long white plumes on each wing of the cock bird. The rest of the plumage is black on the male and of a grayish color on the female. Gathering the feathers is no easy task. This work has to be done with great care, for a kick from one of the powerful legs of the bird is enough to disable a man for life or even kill him outright.

At the plucking time the birds are driven into individual plucking boxes, and a loose bag slipped over their heads, which tends to keep them quiet. A cock bird will roar mournfully while being plucked, although the operation is absolutely painless. After he has been stripped of his plumage, he is about as ugly a sight as one could behold.

The first experiment of ostrich farming in this country was made by an Englishman, who imported his birds from Africa and paid as high as \$1,200 a pair for them. Where he made no fortune, others have reaped the harvest.

The Small Country House

By Paul Thurston

A Dutch Colonial House Costing \$2,150, Complete



IN Seminary Hill, overlooking the historic Potomac, and about eight miles south of Washington, stands an interesting example of modern American homes which well illustrates the fact that a house need not be costly to be beautiful. The contract cost of this house was twenty-one hundred and fifty dollars, which included all work except the heating, the furnace flue only being arranged for its future installation. In this building the designer, Milton Dana Morrill, of Washington, has used only the most inexpensive materials, but a more charming house could scarcely be built at any cost.

The hilltop where the house stands is the site of a deserted fort which was occupied by Federal troops during the Civil War as a protection to Washington from the south, and the commanding position which made it so desirable as a fortification now makes an ideal setting for this unique and individual home.

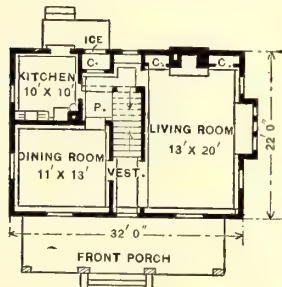
Traditional architectural forms, such as moldings and cornices have not been used, and the whole rings true as an honest construction artistically worked out in such a way that it can be exposed. In this house there is not a concealed timber, all plastering having been omitted and the

studding and floor beams are finished and stained a rich brown. Woodwork has been employed in its most natural and logical shape, and the flat surfaces display to best advantage the beautiful veining and graining of our southern pine.

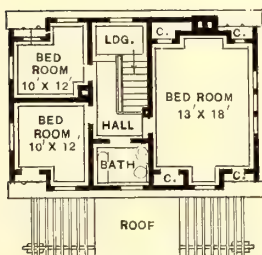
The color scheme has been carefully studied and on the exterior a soft green stain on shingles and white trimmings gives a simple and quite satisfactory effect.

The general opinion prevails that the cheapest finish to give woodwork is to paint it, but such is not the case, and if the wood is of a fairly good quality one coat of stain will give an attractive and pleasing appearance and retain the natural graining of wood which is always beautiful if properly treated.

For the wall construction, wood sheathing was nailed to the studding with the finished side in, and a covering of sea grass quilt was applied, being held by strips which formed a fastening for the shingles. This construction makes a house warm in winter and cool in summer. The underflooring is laid with the finished side down, forming the ceiling of the room below, over this being placed deadening felt and the finished floor applied on strips. Not one inch of space has been wasted in the plan and although the outside dimensions of the house are not great, the rooms are ample and



First floor plan



Second floor plan



A gambrel roofed house built of shingles

generous in appearance.

The porch extends across the entire front and has square concrete piers supporting the roof and the exposed rafters at the ends for vines. The wood forms on these piers were removed before the concrete was entirely hard and the fine sand brushed out, leaving the washed pebbles of yellow and brown exposed, giving an interesting texture and affording an excellent cling for vines.

The first story has a large living-room extending the entire depth of the house, with rough brick fireplace to ceiling, oak shelf, and closets on each side with glass doors. At the side is a square bay with triple sash and window seat with box under. The stair goes up directly from the living-room to a platform with a seat at the rear, and a small bookcase has been built in under the stairs. The din-



The living-room

ing-room opens like an alcove from the large living-room and is similarly finished. The kitchen is not large, and has been planned to save steps. The kitchen closets about the walls are extremely convenient, and the location of range and sink side by side economizes labor in cooking. A hood over the range with vent to chimney makes the kitchen and the room above much cooler than they otherwise would be.

From the pantry, access is afforded to the cellar, the dining-room, the

kitchen and the living-room, and the ice box is built in with an ice door opening outside. In the second story one large chamber with four closets occupies space over the living-room, and two smaller chambers are placed at the opposite end of the house. The bath is centrally located. There are no moldings to catch dirt or dust.

A Craftsman's House Costing \$2,400, Complete



WHEN a man wants to build a house for the amount of twenty-four hundred dollars, the average architect will inform him that it is impossible, if anything out of the commonplace is desired.

Yet a close study of the model house which is illustrated herewith and which

evidence of a very careful study on the part of the architect. In design, it is what might be termed a Craftsman house, and is one that is adapted to any locality.

The underpinning and the first story are built of red brick, laid up in white mortar, with raked joints. The second story is of cement rough cast. All the exterior woodwork is of cypress, stained and finished in a soft brown color.

A novel feature is the arrangement of the front porch; the glass doors which enclose part of the front of the living-room swing out, meeting doors which are hinged back of the porch piers, and enclosing the portion of the porch, forming a sun-room when desired.

A small vestibule forms an entrance to the house, in which the stairs from the first floor ascend to the second. A door opens into the living-room.

A broad archway is built in between the living-

was built for W. F. Struthers, will show what an architect did build for twenty-four hundred dollars complete.

The elevations are exceedingly artistic and attractive, and the interior arrangement of both the first and second floors are as complete in every detail, as it is possible to make them.

Of course, the house is not a large one, neither is the family which is to occupy it.

The illustration of the exterior shows every



A craftsman house built of brick and stucco

room and the dining-room, with a china closet in the dining-room, and bookcases in the living-room.

The fireplace in both of the rooms is built of pressed brick, with red tiled hearths. The trim throughout the interior is of cypress, stained and finished in a soft brown color.

The living-room and the dining-room are well provided with windows for obtaining light and ventilation.

The walls of the entrance-hall and the living-room are covered with a Japanese grass cloth in its natural silvery tone. It is an excellent treatment for the walls, for it forms a perfect background on which to hang pictures. The walls of the dining-room are covered with a two-tone yellow striped paper which blends harmoniously with the color tone of the living-room.

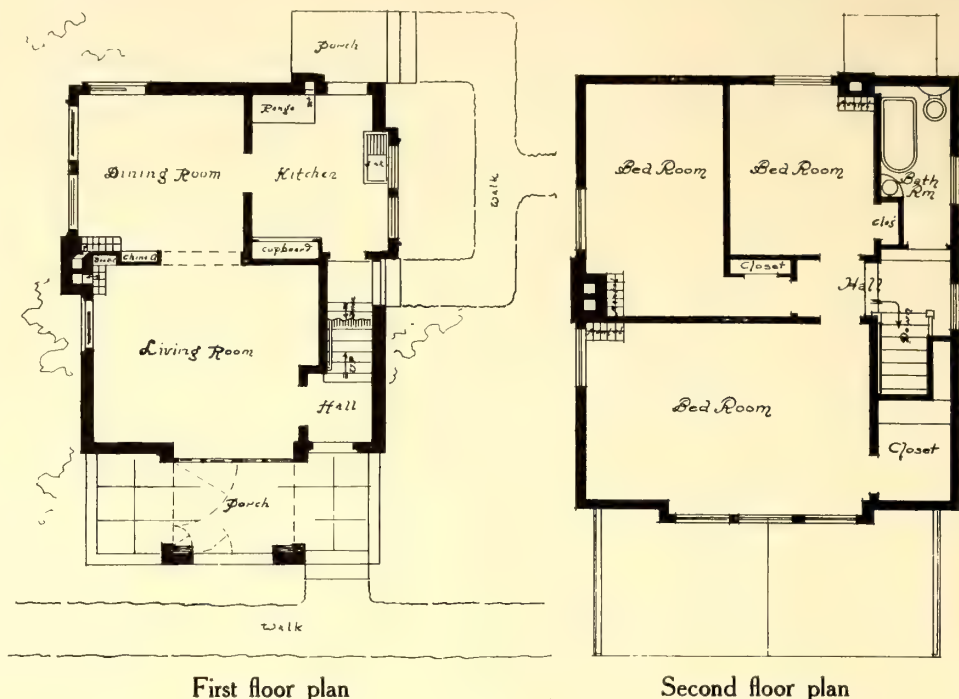
The kitchen is planned for convenience and opens direct from the dining-room, which is not a bad idea, where labor saving in housekeeping is desired.

The kitchen is furnished with a range, an enameled sink, a cupboard with closets and drawers built in below the counter shelf, and shelves above the last enclosed with glass doors.

The walls of the kitchen are painted a soft yellow which carries out the general scheme of the house. This color scheme is one that always suggests a sunny effect on the duller days, is one that is easily kept clean by giving the wall a washing occasionally, and is, consequently, one of the most desirable colors to use. The kitchen has two entrances, one at the rear, and one at the side of the house; the latter built in connection with the cellar stairs. This

is an admirable feature, as access to the cellar is obtained without going through the house, and by this arrangement the usual outside entrance is omitted.

The front bedroom on the second floor is treated with white enamel; that over the dining-room in mahogany finish, and the one over the kitchen with apple-green paint.



First floor plan

Second floor plan

A House of Modern Design Costing \$3,200, Complete



HE house forming the subject of this article, while of no particular style of architecture, may be regarded as an example well adapted for a suburban or a country site. It is one of modern design and of moderate cost and combines all the essentials which go to make a small

house livable. There is absolutely no waste space, and every room is of good dimensions in spite of the fact that there are nine rooms in a given area of thirty-two feet in width and twenty-eight feet in depth.

The exterior of the building is of rough hewn clapboards, stained a soft brown tone, while the remainder of the building is covered with a cement stucco. This house could just as well be built of concrete, or of clapboards or shingles, if

a frame house seemed more in keeping with the surroundings.

In the use of field stone for underpinning and chimneys an effective and an inexpensive material is found, for in many places this can be picked up on the property or selected from old stone walls which are so prevalent in the eastern states. This underpinning is backed up with a concrete wall.

The broad vestibule and the hall, are trimmed with cypress, and so are the living- and the dining-rooms.

A feature which is worthy of note in the plan is the separation of the entrance hall from the staircase hall by a sliding door glazed with leaded glass, which enhances rather than cuts off the view and which has been proved very satisfactory, particularly since there is no rear stairway.

The hall is finished in a dull green stain



A modern house built of boards and stucco

with forest effect. The stair case ascending to the second story is of ornamental design and in keeping with the house.

The living-room is treated in a similar manner and in addition, it has a beamed ceiling and an open fireplace built of red brick, and finished with a mantel made from a special design. Low bookcases are built in either side of the fireplace. The dining-room has a dull green stained trim. The ceiling is beamed, forming panels.

The kitchen is fitted complete with all the best modern improvements.

The second story is trimmed with Tennessee poplar, stained and finished in mahogany. This floor contains four good-sized bedrooms, provided with ample closets, and a bathroom finished in white enamel, and furnished with porcelain fixtures and exposed plumbing. This house was built in Kalamazoo, Mich., from plans of A. M. Worthington, architect, of the same place, and would have cost a little more if it had been built in the east. There can

be no doubt, however, that the number of interesting and inexpensive houses being erected throughout the country is increasing rapidly, and this has been brought about by the people of moderate means who have demanded something more than the usual "hammer and saw" house, which was, and is still, frequently seen in the suburbs of the larger cities—a type built by a builder for a client, without the assistance of an architect. This system of building small houses was prac-

ticed extensively throughout the country, and it is only in the past ten or fifteen years that the prospective home-builder of moderate means understands the importance of securing the services of an architect to design his house and professionally to supervise its construction.

Again, he found this assistance desirable when he wanted a house which would be distinctive in character, and also one which would possess all the qualities that go to make a home livable, and convenient for housekeeping. He

learned, too, that the commission which he paid to the architect for his services in drawing the plans and superintending the work was more than paid for in the saving made through the competition of builders, and in seeing that the owner secured that for which he was paying. This is prudence, for in the long run the owner is saved much annoyance in escaping the usual complications which arise in a building operation.

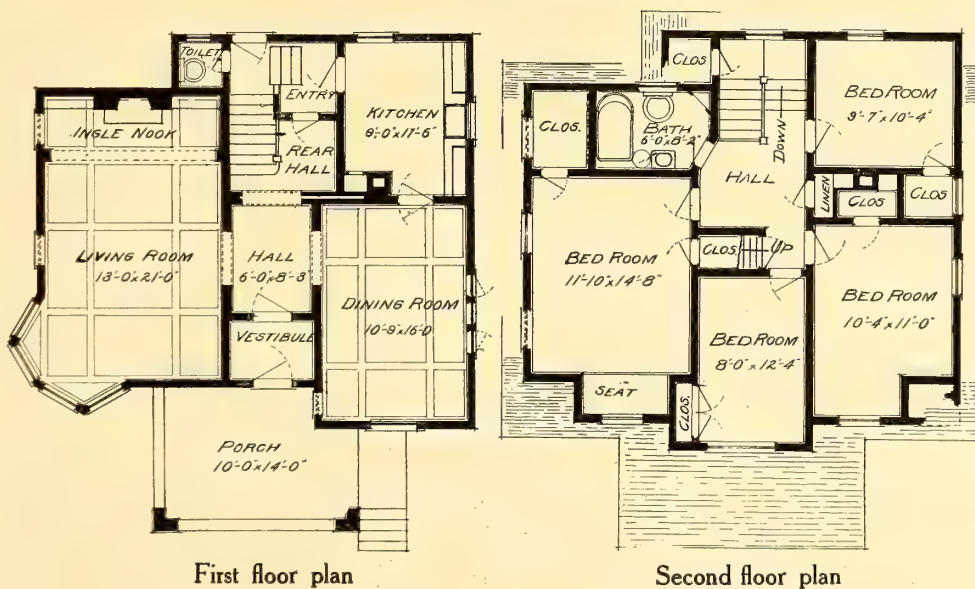
He will be better satisfied, too, when he realizes that the house which he has built occupies a position of distinction and class among his neighbors.

All the small houses, illustrations of which accompany this article, have been designed by architects who have made a special study of the small house, as

is evidenced by a close study of the elevations, and the floor plans of the houses presented in this paper. They not only possess a character that is striking and interesting, but they also show what can be done with a small amount of money.



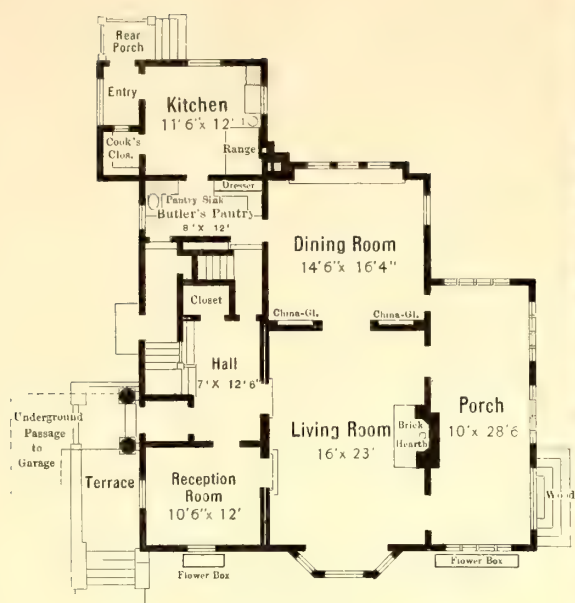
Cobblestones are used for the underpinning and chimney



First floor plan

Second floor plan

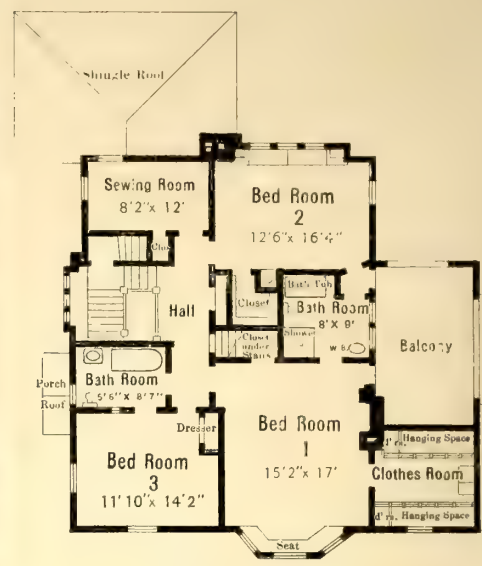




First floor plan



The entrance porch



Second floor plan

A House and a Garage

By Robert Prescott

THE house illustrated herewith was recently built for James Masterson, Esq., at Crescent Hill, Bay Ridge, N. Y., and is of unusual interest for the reason that it is erected in connection with a garage.

The site upon which it is built is about nine feet above the street level, thereby giving an unobstructed view of the river and the bay.

The house is of frame with the exterior walls covered with cement stucco. The roof is covered with shingles, with the gable ends woven and thatched down over the verge boards. The woodwork is stained chestnut. The porch is finished in white cement with a red tiled floor. The hall, finished in white enamel, has a staircase treated in a similar manner, except that the rail is of mahogany. The reception-room is finished in the Empire style, with low dado and paneled walls. The living-room finished in mahogany, has a gray brick fireplace extending to the ceiling. The mantel is a simple one, with a huge panel placed above it. The dining-

room is treated in white enamel, and has a paneled wainscoting four feet in height. The service end of the house is complete in every detail.

The second floor is finished in white enamel and contains three bedrooms, sewing-room and two bathrooms, the last being wainscoted with tile and furnished with porcelain fixtures and exposed nickel-plated plumbing. The clothes closet connecting with the owner's room is an unusual feature of the house.

The house is thoroughly equipped with electric light, gas, house telephone, burglar alarm at all openings, and a hot water heating system. The garage, which is entered

at the street level, is connected with the house through an under-ground passage from the cellar. The roof is carried over the garage and does not project above the upper grade level. The garage is constructed of reinforced concrete, and is entirely water-proof, as it comes in contact with earth on all sides, except the front.

Mr. Charles C. Wagner, of Brooklyn, was the architect of this interesting house.



The garage is built in the terrace at the side of the house



GARDEN NOTES

CONDUCTED BY CHARLES DOWNING LAY



THE GARDEN COMPETITION



AFTER some study of the three gardens which were awarded prizes in the AMERICAN HOMES AND GARDENS Garden Competition, they arranged themselves in the minds of the judges in their present order, though at first they did not do so. It was curious to note, after the gardens were arranged first, second and third, how perfectly the accompanying descriptions deserved this order.

It is a question whether Dr. Miyaki's place should be called a garden; whether such a fantastic arrangement of stones, water and plants ever could be a garden. But the same question arises with equal force when we look at the other photographs and see not flower gardens, but in one case a pseudo-naturalesque treatment of a back yard and in the other a very rigid and formal treatment of the same uninteresting problem.

A garden in our opinion is not only a place for flowers, to grow well in, but it is also a place to arrange them beautifully just as a room in a house is not an exhibition hall but is a place for the convenient and happy placing of furniture and works of art.

Convenience is a prime requisite in any garden and convenience usually means a regular and formal arrangement. We must feel when in a garden that the work required to make or to maintain it is not out of proportion to the result attained. It must be in accord with the lot and with the house and with the owner's apparent means.

The first prize garden does not seem to fill these requirements as well as the second prize, yet on the whole it is more deserving.

It is difficult to judge of a garden's merits from a photograph, because the color is lacking and because the camera gives a false impression of perspective and of distance. A Japanese garden is particularly difficult to judge, because it is so personal and so at variance with western ideas of good taste and of beauty. We shall be discouraged when "Every Man is his own Japanese Gardener." The results of his labors would be so much worse than the atrocious "rock blossom throne" shown in the photographs. We have seen rare bits of garden architecture made of clam shells, horse-shoe tiles, and, of course, rustic work of wood, but such things belong in the age of what-nots decorated with pine cones.

We cannot agree with Dr. Miyaki's harsh words about lawns without a qualifying statement that the trouble with our lawns is not that they are grassy, but that our ideal is too often the green baize billiard table. Certainly the undulations of a really picturesque lawn are very beautiful and more in harmony with our spirit than the toy lakes and hills and caverns of Dr. Miyaki's garden. We are an unimaginative people and see in a lawn little more than the simple (but exquisite), beauty of softly modeled surfaces, the wonderful brilliancy and variety of color as the shadows flit over it, and its satisfying air of neatness and good cultivation. We do not see in a Japanese garden the likeness to Fuji in a little mound of earth, nor do we get the delight which we should from a stone shaped like a toad or a tree trained to resemble the fantastic tentacles of a devil fish. It is difficult to think of a sublime alpine scene reduced in

scale to fit a forty by sixty lot and impossible to think that any of its beauty would remain after such a reduction in scale.

In a Japanese garden the beauty of its details depends on their resemblance to something else as much as in whatever inherent charm they may have.

The second prize garden is a delightful bit of planting and a very excellent use of a difficult space—a long narrow lot with a service path which it is desired to hide. The view from the house with the lawn in perspective is very good and must be full of variety. On a similar space we might be tempted to curve the service path close to an irregular border, with no planting between it and the lawn, and thus get the full width of the lot in the scene. The garden seats are, of course, unfortunate and we should like to have the rock edging less conspicuous.

Such a place as this is pleasing to look at and it is moreover a good place to grow flowers. In this garden the use of the space is secondary; the flowers are the important thing, whereas in the Japanese garden the flowers are secondary and the use of the space most important.

The third garden illustrates the extreme development of a garden (or rather ornamental lawn), planted with what we call soft stuff; tender annuals which the first frost destroys.

It is a queer mingling of the supposedly picturesque (the apple tree with flower pots), and of the intensely formal (the beds of clipped Kochia).

No layout could be devised more perfectly adapted to showing off the brilliant colors of cannas and caladiums, nor could a more striking use for Kochia be found.

The scheme as a whole is entirely lacking in any sense of design, in scale, composition or proportion. Its luxuriance and neatness are its only commendable features. It is a pity that such a beautifully smooth and well kept lawn could not be used as a background for better stuff than Kochia. A flowering apple tree, a pair of magnolias and a few good climbing roses would be much more lovely.

There are innumerable flowering shrubs which could be planted as specimens along the path. They need little care and increase in beauty every year.

Evergreen trees, too, could be used and the Kochia might be replaced by arbor vitae or hemlock or spruce.

What all these gardens lack is breadth of treatment and simplicity in design. It is a common fault with amateurs in every art to attempt too much, and thus miss the greatest effectiveness of their work.

With less stonework, fewer paths, and larger water surfaces, the first prize garden would probably be more striking and it even might be convincing.

In the second prize garden there are too many kinds of plants; all are lovely, no doubt, but the garden itself would be better if there were only a few in large masses to strike the eye with a blaze of one color at a time, instead of the mosaic which it must be now.

It is well to try as many plants as one can, but I think it will be found after a time that most of one's pleasure comes from a half a dozen favorites.

The third garden is overdone in a similar way. The lawn in this case would be more satisfying if there were nothing in the middle of it, not even the path.



A touch of Japan

American Homes and Gardens' Garden Competition

First Garden Prize

Won by Dr. Shiro Miyaki, St. Louis, Mo.



UNDOUBTEDLY the most beautiful scenery is found where mountains and waterfalls combine; for example, in Norway, Switzerland, Japan or New Zealand; where nature omitted to provide space for the patent lawn mower.

When the average man starts to create a handsome spot out of his miniature estate, does he follow the beautiful examples set by nature of combining in graceful arrangement mountains and valleys, canyons and waterfalls, rivulets and lakes, all regulated to the size of his estate?

Only too often, the reverse, for nature may have left a natural depression in the land easily converted into a pond or lake, but alas, he has but one idea, the one so often set before him, of leveling it off, and the more level the better, to better accommodate the everlasting lawn mower.

He does not seem to realize that just in proportion as his little estate becomes, through irregularities, unsuited to the mower, does it develop those beautiful little variations and irregularities that we always admire in nature and spend our vacations to seek out.

Lawns are invaluable and becoming more so every day; they are the finest places known to man from which to start the family aeroplane, graze the Jersey and for pos-

sibly some other purposes. Shall we continue to make our gardens such that a view taken from any one of the four corners gives the same view, only varied by the varying angle at which the individual grass blades are seen, with a round geranium bed in the painfully exact mathematical center of the enclosure, embellished if one will by a straight hedge on all sides, or shall we receive new inspiration from nature.

Should this be too radical and we still must have something round, let us forget to use a string to make it so, fail to center it exactly and change it to a puddle of water with aquatic plants and gold fish for variation.

Build an elevation, a hill or a mountain for a seat or a tea-house to command a view of lakes and valleys below. Build it on and over the ash pit.

What! The ash pit? Who ever heard of such an idea?

Not a bad idea nevertheless, for do we not want the ash pit hidden and will not a mountain with rocks, vines, trees and shrubbery faced perhaps by a canyon and waterfall most certainly do it?

An angel might alight on such a mountain and be unconscious of what was lurking beneath.

If water "should" leak from the canyon high up on the mountain and fall many feet on to a selected rock that nature has taken centuries to concave and from there to



A vista through temple gate pergola

spatter into hundreds of iridescent drops far out into the lake over the sporting gold fish below. Do not try to stop that leak, it freshens the air and may even produce a miniature fog to be seen when the conditions of air and sunshine are favorable, that envelops the mountain at all times, to keep it green, even to the moss planted in the canyon crevices, rivalling nature.

Let us select for rocks the quartz crystal ones, really crystalline sand, which are found closely associated with lead and zinc ores, as these are honeycombed with holes of all sizes up to an inch or more and in length only limited by the size of the stone.

In color, reds, browns, touches of gray, yellow and crystal predominate.

These rocks appear much water worn or volcanic, but are really chemically formed and crystallized out of a strong alkaline solution under great heat and pressure with a trace of iron for color and afterward through volcanic action deposited on the surface and found as field stones beautifully weathered, touched with moss and vegetation and called by the natives mineral blossom.

For garden work these rocks are much superior to boulders or water worn rocks due to their colors that blend so well with the green, and owing to their porous nature they are most attractive to vines, moss ferns and wild flowers.

This variety of rocks has the very decided advantage over boulders that they can readily be changed to any shape by a cold chisel and hammer in the hands of any one, though inexperienced in stone work.

The exposed cells offer the strongest possible attachment for cement work, best illustrated in stone seats, temple gates and wall arches.

The unique and highly artistic garden shown in the illustrations occupies a space of only 60x40 feet, but contains four waterfalls of which one is illuminated, seven bodies of water, large and small; three bridges, three stone seats, two temple gates, two lanterns, a hooded gateway leading to the house and an umbrella tea-house, all surrounded by a most unique and artistic stone wall.

A serpentine pathway leads up the mountain side, past the crow of the canyon, back of which two stone seats are all but hidden among the trees and shrubbery, continuing its varying course down the opposite side to merge with the 350 feet of walks and step

stones throughout the garden. The entrance from the public highway presents a five-foot open-work stone barrier, in the center of which is a red cobble stone initial through which the wayfarer may see the green beyond and around which one must go before entering the garden.

Between the main branches of a spreading catalpa trained to the outline of an immense elks horn, a hammock is most appropriately hung, in which one may lie and view hundreds of gold fish in the lake, of all ages, sizes and colors, for a mature fish may be golden spotted or an albino, but a baby gold fish is always black as night and can be easily raised from a pair by only the trouble necessary to remove the water hyacinth after the spawn is deposited on its roots to a second pond empty of fish; for gold fish will eat their own spawn.

Even a two months fish will grow fat on spawn and fish just hatched.

Therefore it is best to use several ponds. Puddles will answer for some, but one must only not associate too small fish with too big mouths.

The water "spattered" from our leak on the mountain may find its way by two sources to the outlet in the lower lake.

Some passes under an arched rock on to a perpendicular sheet of glass faced by horizontal strips of glass, the strips being held in position by a cement framework, all resembling a window shutter, which breaks the water into individual drops as it trickles from the side of one glass strip to the center of the one below.

An electric light placed back of the glass produces a beautiful electric fountain effect, the whole appearance being doubled by its own reflection in the water below. Other water crosses under the path into an open canal encircling the umbrella and after crossing a miniature aqueduct, drops by a second fall into a Filipino, toko-bolo shell, weighing 70 pounds and of such generous proportions that it offers a home for several gold fish and a few water plants.

The excess of water from the shell forms a third waterfall into two small shallow lakes for the birds to bathe in; the same water finding its way over a paved bottom of small sea shells into the lower lake by a fourth waterfall.

As shallow cemented lakes do not winter well containing water, provision is happily made for keeping the gold fish



The walk leads from the upper to the lower lake



A scene through the glen

in a cemented cave seven feet deep hung with stalactites.

It is arranged to protect the entrance to the cave by glass to prevent ice forming during the extreme weather.

Owing to the arched roof of stone and earth overgrown

with plants and its depth and small entrance, the fish winter quite protected in the cave.

For the walls, mountain umbrella and temple-gate pergola, wisteria, woodbine, clematis, hyacinth bean, moon



The lantern lights the way over the bridges

vine, cinnamon, wild trumpet vines and wild grape find place.

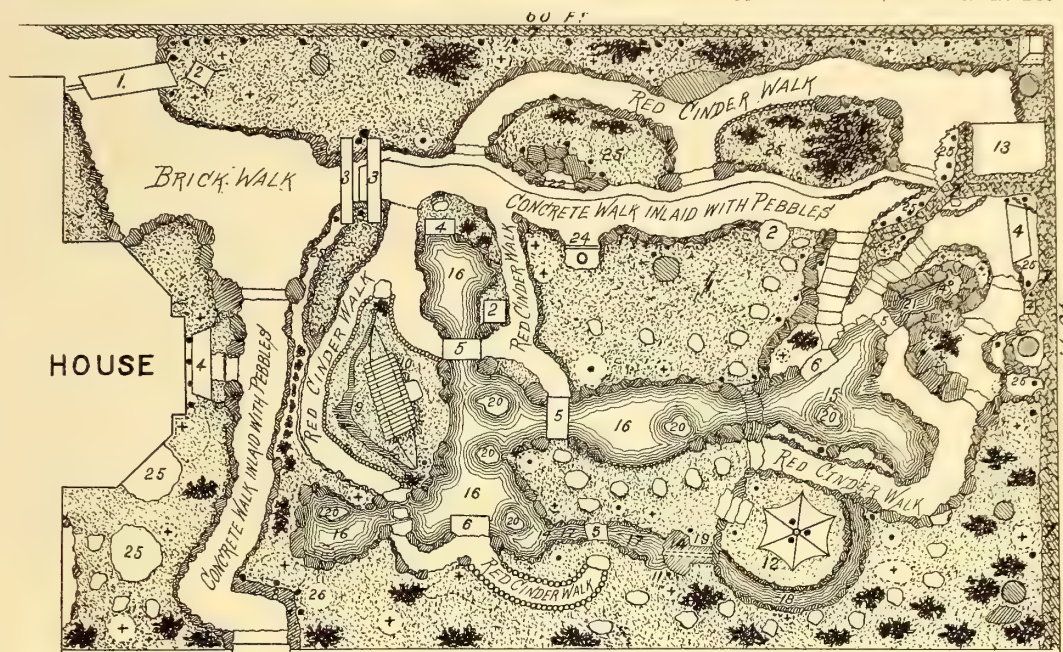
For the lakes and damp places umbrella plants, cabomba, parrot-feather, cat tails, water cress, pond lilies and lotus.

For the rocks, moss, ferns, Kennelworth ivy and wild flowers.

For the garden in general, evergreens, privet, catalpa, red leafed Japanese maple, sweet gum, horse chestnut and Japanese empress trees.

For the general garden wild flowers with many ferns predominate; in fact plants that can be procured wild on account of their hardy nature are most favored and of such nature provides an ample selection if one will only take time to study and collect them.

1. Rustic wooden gate. 2. Japanese lanterns. 3. Japanese temple gates. 4. Stone Seats. 5. Stone bridges. 6. Over hanging rocks. 7. Stone walls. 8. Entrance walls. 9. Catalpa tree (resembling an elk's horn.) 10. Hammock. 11. Toko-bolo shell. 12. Umbrella tea house. 13. Ash pit. 14. Water falls. 15. Upper lake. 16. Lower lake. 17. Pool



- (the bath for birds.) 18. Aqueduct. 19. Stone arches. 20. Islands. 21. Canyon. 22. Cave. 23. Dry creek. 24. Water supply. 25. Flower beds. 26. Water outlets.

The lakes should receive a final touch by furnishing them with polywogs, turtles and frogs, sail boats, artificial frogs and ducks placed in natural positions.

After the seclusion that the family is entitled to is amply secured, every facility for the public enjoying the garden should be provided as its power for fresh inspiration to others as well as pleasure is unlimited.

Every one who builds a house of his own in the country wants a garden, and this is one of the reasons why the remarkable movement countryward has become so marked a feature of rural life. A garden such as the one illustrated adds a charm to a country home.



A Japanese effect



Lace work in stone



A garden walk



Border showing Valerine Peonia Spirari

Second Garden Prize

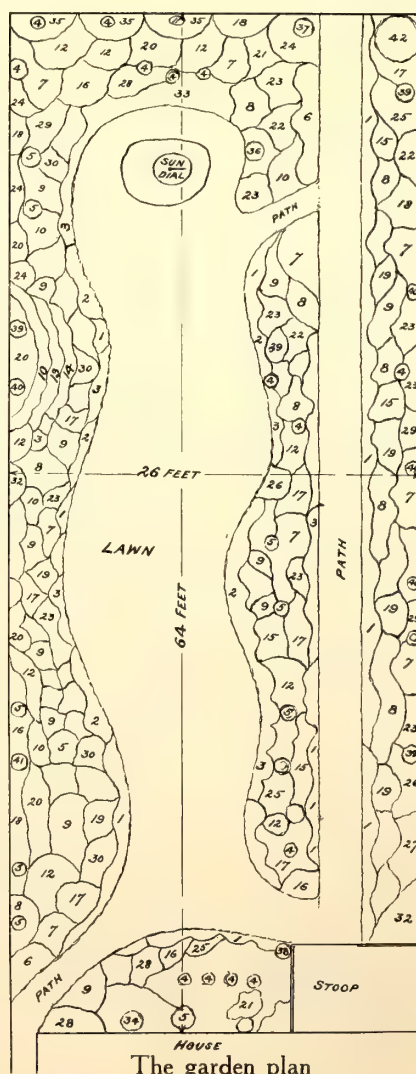
Won by James M. Hull, Esq., Hamilton, Ontario, Canada



FEW years ago, in the month of July, we moved into our new home. It was too late in the season to have a flower garden then. But having a great desire for one, I thought I would dig and get it ready for the fall planting. When I went to spade it I found the soil so very hard I could not make a dent in it, even with an axe. So I gave it up until the fall when I put on sand and manure, or any soil I could get that was suitable to mix with the clay. I dug the border 18 to 20 inches deep, and mixed in the soil with the clay, which now makes a good soil, as the clay retains and holds the moisture.

Before commencing the garden I had a definite plan in view, which was to have a picturesque garden, effective from all points of view, with an abundance of foliage and flowers from early spring, until cut down by frost, and I think I have succeeded. Each year I see where I can improve on it, and make it more complete. To get the effect desired, I left the central part grass, and made the sides and end irregular to hide the fence with vines and shrubs. As I wished to have a permanent garden, I chose perennial shrubs and vines. The first year I filled in with all of the wild flowers I could gather, such as the daisy, aster, golden rod, ferns, lilies, phlox, violets. I have retained some of these—they are so beautiful and effective. The border shows all these flowers charmingly intermingled, with long plumes of larkspur, or spear-like leaves of iris, or dainty golden stars of coreopsis. Phlox, calendula, aster, zinnias,

marigold, with a background of shrubs and vines. The garden is distinctly an individual one, planned and worked by one person, embellished and beautified with comparatively simple means, and a few hours' hard work every week in the beginning. It is a garden of gay blooming, sweet scented flowers. It has been planned and planted as an outdoor living-room, for the summer months. Its gradual development brought up the questions of permanence, artistic arrangement, harmony of color and the lengthening of the flowering period. Beginning in the latter part of April and early May I have the most hardy spring bulbs coming in bloom. Tulips, narcissi, daffodil, and crocuses are planted between the perennial plants, back from the edge of the border, as they are past their bloom before the others are much grown. The late tulips look beautiful next to a clump of wild blue phlox. They bloom at the same time. I have for an edging of the border small boulders, between and over which grow moss, phlox, June pinks, pansies, sweet alyssum and forget-me-not, which help to keep the edging brilliant from May to October. Next to the fence grow shrubs and vines and tall plants, such as heliotropes, sunflowers, hardy delphiniums, hollyhocks, hardy asters, chrysanthemums. There are also achillea, aconitum, aquilegia, canterbury-bells, heleniums in variety, also iris, monarda, peonies, phlox, Oriental poppy, rudbeckia, spiraea, Sweet William, valerina, lychnis and a few other varieties, the majestic lilac and blue delphinium are prominent. Clusters of canterbury bells, blue and white and purple, rich red pink and white phloxes, yellow



The garden plan

1. June pinks. 2. Moss pinks. 3. Forget-me-not and Alyssum. 4. Peonies. 5. Roses. 6. Violets. 7. Monarda didyma. 8. Sweet William. 9. Oriental poppy. 10. Phlox. 11. Helianthus, 5 varieties. 12. Delphinium. 13. English iris. 14. African Marigold. 15. Valerian white. 16. Rudbeckia-Newmania. 17. Aquilegia. 18. Hardy-aster. 19. Canterbury bells. 20. Heliopsis. 21. Hollyhocks, white.

22. Hemerocallisflava. 23. German iris. 24. Golden-glow. 25. Spiraea-pink. 26. Erianthus, plume grass. 27. Valeriana red. 28. Tiger lilies. 29. Chrysanthemum. 30. Achillea, white and red. 31. Aconitum. 32. Petunia. 33. Asters annual. 34. Snow-ball. 35. Syringa. 36. Pear tree. 37. Maple tree. 38. Small elm tree. 39. Four peach trees. 40. Five grape vines. 41. Plum tree. 42. Ash Barrel.



A photograph of the garden made September, 1910



The other end of the garden

heleniums, glittering gillardias and Oriental poppies, the king of the garden, as the rose is the queen.

Violent contrasts are avoided by skillful arrangement of harmonizing color.

Every foot of ground is clothed with varied vegetation, and yields its due proportion of flowers. When early plants are through blooming I fill in vacant places with annuals, such as asters, marigolds, zinnia, verbenia, salvia, petunia, nasturtiums. With the help of these annuals the floral procession keeps up and on until the end of the season.

At the south end of the garden in front of the Japanese bird-house, there is a round bed, composed of low growing plants. The center has a tub of pink water lilies, sur-

rounded with forget-me-nots, tuberous begonia, verbenia and white candy-tuft. It makes a beautiful mingling of soft colors, which blend and harmonize like a setting of a beautiful jewel.

The proper arrangement of the grounds is as important as the internal arrangement of a house. The lawn, garden and clothes yard should, as in this case, be laid out in perfect harmony.

Who would not like to have the satisfaction of possessing such a garden as this to add to the pleasure of living in the country?

There is not such a great honor in acquiring a garden which has been laid out under the direction of a paid landscape architect as one that has been planned and built with one's own hands.



A photograph of the garden made June, 1910

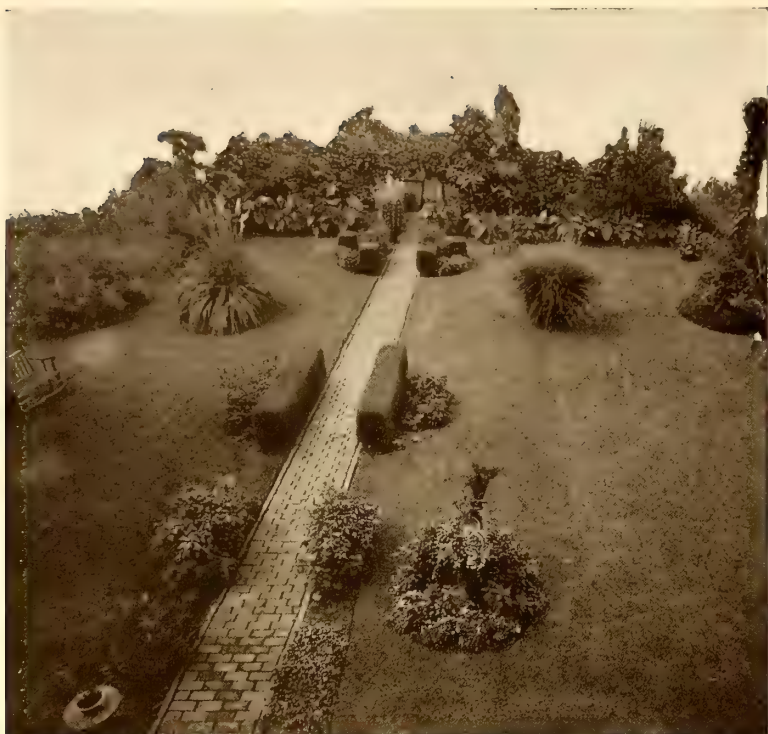
Third Garden Prize

Won by M. F. Ault, Indianapolis, Indiana



THE space occupied by the garden described below is fifty-three feet wide and seventy-six feet long. It is bounded—north by a hedge of California privet, east by the residence, south by a tight fence, and west by an alley fence which in a short time will be taken down to make room for a hedge of California privet. The garden is about equally divided, the long way, by a brick walk, and on either side of the walk are beds of primroses, bluebells, coriopsis, geraniums, and Mexican fire-bush trimmed to rectangular form—as shown in the illustration. The background of

the garden is a Concord grape arbor, eight feet high, and seven walnut trees which started from nuts buried by pet squirrels. Also the background is bordered by a row of alternating cannas and caladiums. The high fence on the south is partly covered by Boston ivy, while the rest is concealed by a row of artichokes, a bed of golden-glow, a bunch of red cannas and a Norway maple. Extending to the north from the brick wall is a cement walk, and in the angle of the walks is a circular bed, four feet in diameter, bordered by ageratum. The center of this bed is occupied by the stump of an old apple tree which is surrounded by various coleus plants, and surmounted by pots of geraniums, ivy



A general view of the garden



A tree stump is artistically treated

and ferns. On the east border of the cement walk is a barberry bush, a clump of iris and a row of Kochia trimmed to oval form, while at the junction of the walk with another along the north side of the house are two beds—one of asters and the other of Kochia trimmed to cone shape—both beds being flanked by ornamental grasses and daisies. The hedge forming the north boundary is bordered by a row of dwarf nasturtiums.

On closing our general description we will state that

the center of each grass plot is ornamented by pampas grasses which grow eight and ten feet high, terminating in plumes which are not surpassed in beauty of structure, gracefulness and delicacy. Also, in the north plot there is a post twelve feet high, surrounded by a bed of trimmed fire-bush.

To the lower half of the post clings a matrimony vine, while the persistent and homely moon-vine climbs and encircles the top.



The end of the garden has a profusion of growing shrubs



CORRESPONDENCE



The Editor of *American Homes and Gardens* desires to extend an invitation to all its readers to send to the Correspondence Department inquiries on any matter pertaining to the decorating and furnishing of the home and to the developing of the home grounds.

All letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this Department.

Problems in Home Furnishings

By ALICE M. KELLOGG

PICTURES FOR A LIBRARY

“WHAT pictures would be suitable for a small-sized room used as a library?”—L. M. J., Brooklyn, N. Y.

The personal tastes of the occupants of the room should be the first guidance to a choice, which would, necessarily, be modified by the conditions of the room and the amount of money to be expended. The accepted or popular ideal for the walls of the home library is a set of portraits of eminent authors, or other celebrities, or photographic copies of classical pictures, architecture and sculpture. While this plan is suitable for a formal room, or for a library belonging to a scholar or teacher of the arts, it does not sufficiently interest the family of ordinary cultivation.

A mistake frequently seen in the collecting of pictures is in having too great a variety, with generally a superabundance of those of too small a size to appear to advantage on the wall. Before the subject of the pictures themselves has come to the point of selection, the lines of the wall may be studied to see if they will be improved (or otherwise) by being broken up into smaller spaces. The covering of the wall is another factor that enters largely into the choice of pictures. A vari-colored wall paper with an aggressive pattern does not lend itself as background for a water color or an oil painting. Nor does a wall tinted in a plain neutral tone make a pleasing surrounding for etchings and engravings.

If pictures in color are preferred, and only a small outlay can be made, the prints made from Jules Guerin's studies of the old chateaux of France, the Library at Washington and Independence Hall give a good deal in artistic interest at a slight cost. The Century prints are also attractive in color effects. Some German prints at twenty-five cents each are surprisingly good for the price. Tinted photographs of all kinds of subjects are another inexpensive decoration, and, at a larger outlay, the copies of oil paintings by the modern German masters are commendable.

Among the black-and-white and brown-and-white pictures the Copley prints are notably good for the library. The foreign photographs of famous pictures are of greater value than the ones made in this country as the former are made from the negative taken direct from the original. There is abundance of material for this correspondent's needs if it is drawn from with taste and discretion.

PAPERING CONNECTING ROOMS

“Two rooms that we wish to re-paper this winter have puzzled us very much. They are not at all alike, yet have heretofore had the same wall paper. One is a general sitting-room with windows to the south and east, light and sunny all day. The other is a small northeast room which

is used for writing and studying. A wide doorway is between the two. The wood-work is painted a bronze green, and the present wall covering is a tapestry pattern. There are small-sized Oriental rugs on the floor in a variety of colors. The furniture coverings and portiere can be renewed at the same time the walls are being re-papered, if you will suggest the appropriate combination.”—S. J. F., Toledo, Ohio.

A change of wall paper will be the best solution for this problem, and the different exposures and uses of the two rooms really demand separate treatment. For the sunny room a good design is “The Cedar Trees” printed in gray, yellow and green. In the smaller room a very small design in the same tone of yellow that appears in the other paper will be a pleasant repetition of color.

The furniture coverings may be chosen from the small-figured tapestries, green and brown or green and blue, or two tones of green. The portiere may be made from the new drapery materials in sun-fast or unfadable dyes, in bronze green with a trace of yellow in the weave. With this combination of colors the two rooms will be harmoniously united while meeting the different conditions.

COLOR SCHEME FOR AN OLD-FASHIONED GUEST ROOM

A California correspondent has just completed a collection of antique furniture for a guest room, and inquires about the addition of rugs and other details of furnishing. “There are two casement windows that open into the room, and I do not know how to curtain them as there is no place for a window shade, yet the room requires darkening at times. Now, would you start the color scheme of this room with an old blue-and-white bedspread? Or, can you suggest something in another coloring that will be as old-fashioned? I do not really care to have blue in this room, as it is already the chief note in my son's bedroom. My little daughter's room is pink and mine is yellow and green.”—Mrs. D. T. E., Los Angeles, Cal.

The casement windows may be hung each with a single width of white dimity, either using one rod at the top, or one at the top and one at the bottom (the first plan looks better). Across the entire casement, at the top, a three-quarter inch brass rod may carry a tick curtain, lined and interlined to make it opaque. This may be drawn across the window when the room is to be shaded.

A chintz wall paper showing lavender-colored pansies suggests a unique coloring for the small articles on the dressing table, and a cretonne with the same tones may be used on the lounge and pillow covers. White dimity trimmed with a white pointed fringe may be hung as an upper valance for the four-poster bed, and for the lower valance around the foot the dotted white taffeta.

(Continued on page x.)

Garden Work About the Home

By CHARLES DOWNING LAY

G. M., Long Island.—Your question about planting shrubs around your house is not different from several others which we have answered with a plan in previous issues of *AMERICAN HOMES AND GARDENS*, and a little ingenuity would quickly adapt these plans to your use. I would suggest, however, that a privet hedge be planted on the line in front and that the shrubs be kept in the corners and close to the house.

R. B. S., Connecticut.—Your idea of using your high pasture land in Connecticut for peaches is probably a good one if it is naturally good land. The boulders and stones will not matter if you can cultivate the trees between the boulders, but land where there are outcroppings of much ledge rock would not be so good. The land should first be cleared of the young trees and bushes which are now on it. This will cost from fifteen to twenty dollars an acre. After they are cut out and burned the land should be ploughed, which can be done for ten dollars an acre.

The only fertilizing which will be needed at first is a good dressing of lime. This can be put on this fall at the rate of half a ton to an acre and it need not be harrowed in until next spring. A good harrowing in the spring will cut up what is left of the sods and leave the land in good condition for planting.

Peach trees should be planted fifteen to twenty feet apart, and the holes should be dug of generous size. It might even pay to dig each hole with a stick of dynamite, in the way described last winter in *AMERICAN HOMES AND GARDENS*.

The trees when planted should be cut back to a single stem about two and a half to three feet high, so that the trees will branch low and the spraying, thinning and picking of the fruit will be easier to do.

Nitrate of soda applied in the spring at the rate of 500 pounds per acre will make the trees grow faster, but is not necessary the first year or two. After three or four years the trees should have 200 pounds of bone meal, 200 pounds of acid phosphate, and 200 pounds of muriate of potash to the acre. These should be applied with the first spring ploughing.

The peach orchard should be cultivated frequently from May until August when a cover crop of rye or clover is sown and allowed to grow until it is ploughed under the following spring to still further enrich the ground.

R. de K. G.—Suggesting Christmas presents is a little out of our line, but for a garden lover there are many tools which would be grateful and comforting gifts.

Budding knives of good quality are always useful, and a small pair of pruning shears will not only be frequently used, but will last forever.

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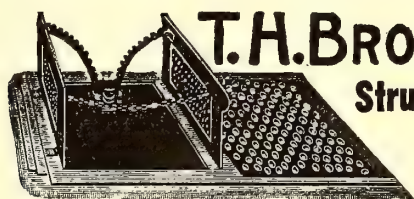
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when one has them. One can never have enough good labels of painted wood, ready to write on, or of zinc with the proper acid and a quill pen. Spades are not always what they seem and long bladed light ones which are strong enough to use in the light soil of the flower garden, but which can be wielded with one hand if one likes are rare and choice.

Baskets and vases for flowers; work baskets with tools and raffia and twine and other useful things; camp chairs and watering pots are all satisfaction to the true gardener.

(Continued from page ix.)

LINEN FOR LUNCHEON USE

"On a visit this summer I saw a very pretty linen table cover and napkins to match in a buff and white damask. I have not been able to find any like it in Boston. Can you tell me where it could be had? The top of my dining-table is not in condition to use doilies, and I would like to make some change in my table linen at one meal. This colored linen appealed to me very strongly as the right thing for this need."—A New England Reader of Problems in Home Furnishing.

The buff-colored damask for table use is rather an expensive set for every-day luncheons, but it can be had in New York city at one of the large department stores. It comes hemstitched with cover and napkins to match, and is especially attractive for summer use.

SEAMLESS RUGS

A correspondent in the South (Mrs. R. D. E.), writes: "Are there such things as seamless rugs that are made in this country, and of good enough quality for a dining-room? I have heretofore had the regular carpet with a border made into a rug for this room, but some one tells me I can get a rug made in one piece. Kindly let me know if there is something of this kind, and the price."

A few patterns in Wilton have, for some time, been made in one piece (or width) without any seam, and this fall a larger variety has been put on the market in wide widths in the same way. A still newer rug has been devised this fall in good combinations of color for the dining-room, in a size nine feet by twelve at fifty dollars. In brown and dark blue in an all-over pattern this rug is very desirable.

A NOVEL method of cutting down trees has been devised by a Berlin inventor. It consists in the use of a fine steel wire, which is looped about the tree and sawed back and forth by an electric motor. The heat generated is sufficient to burn a thin kerf through the wood. A tree 20 inches in diameter can be felled in six minutes. The charred butt of the tree may easily be marked with chalk, and the charcoal layer is so thin that it does not hide any decay or other defects in the wood.

HUNDREDS of carats of diamonds have been registered from a property in the Pretoria district, ten miles from the Premier Diamond Mine, and it is generally believed that a very large mine has been discovered. A great deal of prospecting is being done north of Pretoria, and several interests have been acquired in the neighborhood by an important firm of Johannesburg speculators. The immediate outlook for the Transvaal mining industry is stated to be decidedly promising.

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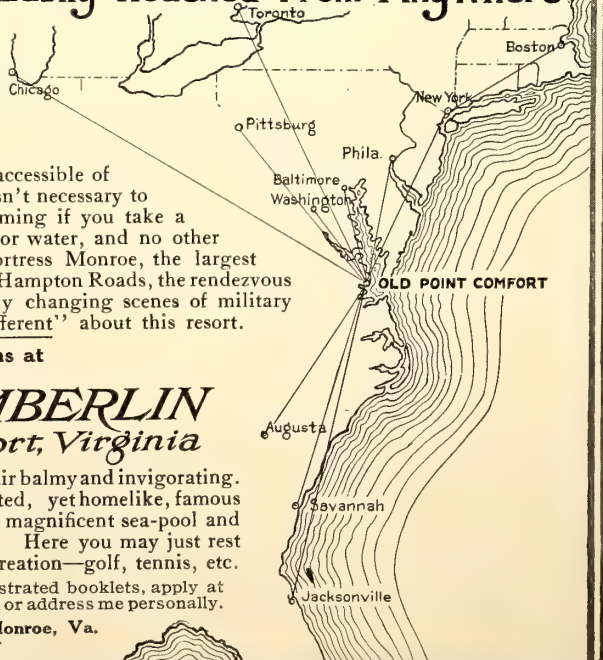
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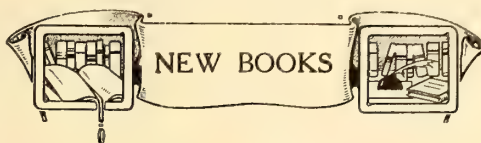
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MOSQUITO OR MAN; THE CONQUEST OF THE TROPICAL WORLD. By Sir Rupert W. Boyce, M.B., F.R.S. New York: E. P. Dutton & Co., 1909. 8vo.; 267 pp. Price, \$3.50 net.

The author has purposely selected the title "Mosquito or Man" in his endeavor to epitomize in one the tropical-medical movement which is now spreading all over the civilized world. Large numbers of well-equipped medical men have been sent to the tropics. Vast mines of literature dealing with tropical diseases have been distributed, and the public has been steadily educated to understand that it is not impossible to make the tropics healthy. The author shows that the three great diseases of the tropics which were the greatest enemies that mankind has ever had to contend with, namely, malaria, yellow fever, and the sleeping sickness, are now fully in hand. The tropical world is unfolding once more to those who do not now dread the unseen hand of death as did the men of old. The book is admirably printed and is beautifully illustrated.

MODERN CABINET WORK, FURNITURE AND FITMENTS. By Percy A. Wells and John Hooper. London: B. T. Batsford. New York: John Lane Company, 1910. 4to.; 384 pp. Price, \$5 net, postage 50 cents.

This is an account of the theory and practice in the production of all kinds of cabinet work and furniture, with chapters on the growth and progress of design and construction. It is illustrated by over 1,000 practical workshop drawings, photographs, and original designs. The book is particularly well made and the illustrations are of satisfactory size. There are many half-tones included in the text, showing exactly how the work is done. We have often wondered why it was that no one had gotten up a book showing how to use the hands in cabinet making, which is a most interesting trade or amusement, depending on whether the person is a professional cabinet maker or an amateur. Wood-working in England has a vogue among amateurs which is entirely wanting in this country. This is probably owing to the fact that they lack proper instruction. This book will give them exactly the information which they are seeking. Among its many good points is a chronological chart giving names, periods, dates, general characteristics and proportions of chairs and seats in various styles. The whole book bears the impress of careful work, and there is little question but that it will have a considerable sale in this country among amateurs. There is also an excellent glossary.

GLIMPSES AROUND THE WORLD THROUGH THE EYES OF A YOUNG AMERICAN. By Grace Maxine Stein. Philadelphia: The John C. Winston Company, 1909. Illustrated. 8vo.; 481 pp. Price, \$2.

Of books of travel there seems to be no end, and every book seems to have more or less of a field of its own. The volume before us is very readable and profusely illustrated with engravings, the originals of which seem to have been selected with rather more than the usual care. The book is printed in large type on good paper and is worthy of an excellent sale.



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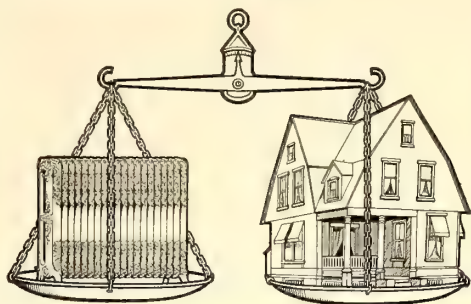
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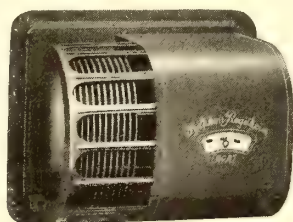
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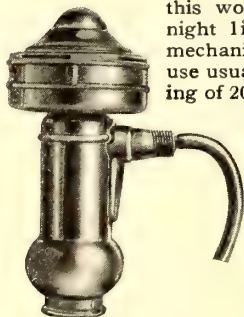
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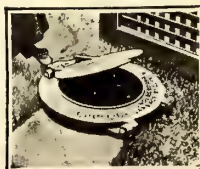
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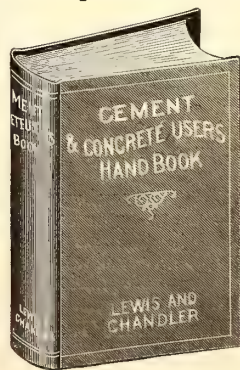
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THE CENTURY DICTIONARY SUPPLEMENT.

Prepared under the Superintendence of Benjamin E. Smith, A.M., L.H.D. New York: The Century Company, 1910. Two volumes, 4to; pp. 1467 -|- 92.

More than a score of years ago the making of the Century Dictionary, Cyclopaedia, and Atlas was begun. After its successful completion in 1891 it was our privilege and pleasure to give this monumental work a thorough review. The last twenty years have seen such wonderful bounds in science, literature, art, exploration, everything in fact, that the necessity for the two new volumes was very apparent, and a careful and repeated revision to which the earlier books were subjected, would never read new material into the copies of those who purchased the earlier editions. Since the parent work was published a new vocabulary has arisen. Time was when the addition of a word to the language was a matter of some note and comment, and frequently of protest, but in these days the inrush of new words and expressions to explain new facts and new conditions, makes it imperative for those who are well informed to be ever mindful of the voices from laboratory, workshop, and study. Similarly there was a time when the careful insertion of a few scattered items, or a few pages at most, in a reference work seemed all that was reasonably required, but no such makeshift can now dispose of the immense accretion of words, sentences, phrases, and all the new knowledge regarding which accurate information is essential, which is an all-sufficient reason for a new edition. The work has been done in a thoroughly scholarly manner, and the editors have not hesitated to call upon various technical and scientific papers for information. Thus, under "turret" we find that "the vertical section through a turret and barbette for 12-inch guns" is taken from the *Scientific American*. No better source of information on this subject can be found than the engraving made from our own careful illustration based on government drawings. Other things are treated in the same way; thus the submarine boat is admirably shown. Seventeen government experts were in charge of various departments of this book. The book is a most sumptuous one and beautifully printed by the De Vinne Press, and the illustrations number thousands. The new volumes add hundreds of names, and read like a roll call of the recent great who have won a place in their chosen field of activity. The collaborators of the present work number seventy-nine, twelve of whom were also engaged on the original work. They include such men as Cleveland Abbe, Edward Atlee Barber, Franz Boas, Stewart Culin, Edward S. Dana, Theodore L. De Vinne, Dr. L. O. Howard, Dr. F. R. Hutton, Dr. George F. Kunz, Edward R. Smith, Charles P. Steinmetz, Prof. Charles A. Young, and many others. Too much cannot be said in praise of this monumental work, which should be included in every library, no matter how small.

THE STUDENT'S MATRICULATION GEOMETRY.

Books 1-4. By Saradakanta Gango-padhyaya, M.A. Calcutta: The Students' Library. 12mo.; 348 pp.

This book has been written in strict conformity with the syllabus prescribed by the Calcutta University for the matriculation examination. A second edition of this book has just been issued, the first having been very well received by the teaching public.



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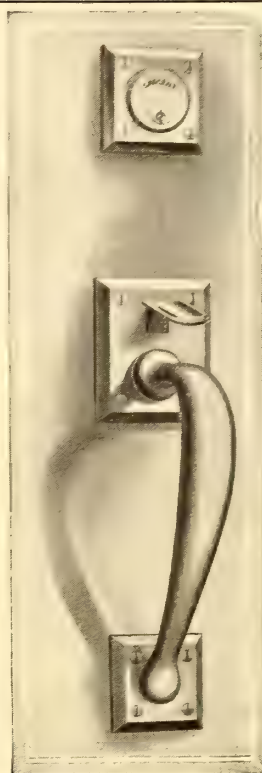
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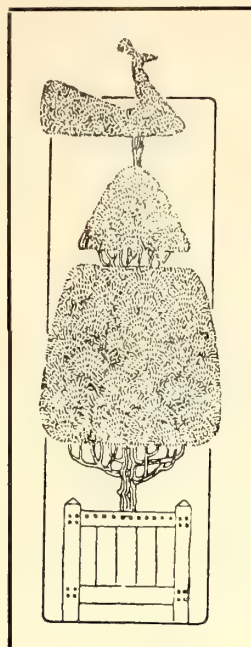
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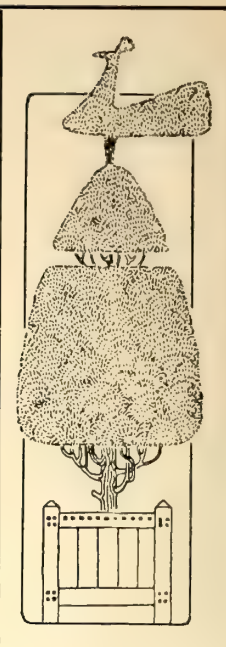
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INDEX TO AMERICAN HOMES AND GARDENS

Volume VII.—January to December, 1910

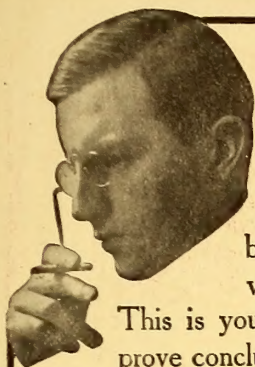


Abbott, G. St. L., Concord, Mass.....	359	Colonial Houses:		—Stearns	427
Alteration of the colors of flowers by cultivation, the.....	180	—Bartlett	149	—Steinbach	88
American forestry school, an.....	71	—Culver	215	Diseases of house plants, winter.....	144
American potter, her home and studio, an.....	364	—Holt	74	Doorways:	
Antique watches in the world, the finest collection of.....	275	—Morrill	480	—Culver	216
Art, Topiary.....	387	—Pope	45	—Douglas	5
Artistic wax work	470	—Rhoades	26	Douglas, Rev. George W., Tuxedo, N. Y....	5
Arts and crafts house, the development of the	196	—Rowles	108	Drawing-Rooms:	
Atwood, J. F., Minneapolis, Minn.....	338	—Thompson	342	—Brown	296
Automobiling:		Colored light on vegetation, the effect of..	154	—Henry	458
—The closed car.....	138	Conant, W. H., Brookline, Mass.....	205	Eastern homes costing from seven to eight thousand dollars.....	18
—The modern low priced car.....	178	Concrete houses, painting.....	39	Ehrman, Edwin H., Oak Park, Ill.....	244
—What the motor vehicle is doing for the farmer	267	Conservatory and green house heating.....	450	"Eirianva," Rev. George W. Douglas, Tuxedo, N. Y.....	5
Aylesworth, A. H., Wilmette, Ill.....	325	Cootey, T. E., Minneapolis, Minn.....	343	Electrical household, an.....	34
		Cows, the danger of the use of milk from tuberculosis	356	Espalier walls, glass.....	452
Bailey, William L.....	431	Craftsman Houses:		Fences, walls and hedges.....	335
Baker, R. S., Wilmette, Ill.....	67	—Struthers	481	Fireplaces:	
Bangle, J. A., Pasadena, Calif.....	188	Craig, Frederick Phillips, Short Hills, N. J.	54	—Craig	55
Barber, George, Englewood, N. J.....	169	Crampton, J. N., Wilmette, Ill.....	324	—Harrington	418
Bartlett, Mrs. E. L., Baltimore, Md.....	312	Crosby, William Spencer, Glencoe, Ill....	442	—Seaman	273
Bartlett, Stephen L., Chestnut Hill, Mass..	149	Cross, C. J., house of.....	68	Fireproof houses, the artistic treatment of.	401
Baxter, A., Park Ridge, Ill.....	201	Crystal Brook.....	304	Flowers all the year round.....	32
Bean shoot, timing the rapidity of travel..	290	Culver, Frederick, Hadlyne, Conn.....	215	Flowers as dessert.....	314
Bear, Ida Pauline, Pasadena, Calif.....	188			Flowers by cultivation, the alteration of the colors of.....	180
Bedrooms:		Decorations and Furnishings:		Flowering cherry, the double.....	160
—Pope	48	—A talk on flower holders	282	Forcing bed and storage pit, a combined..	118
—Rowles	109	—Built-in furniture	348	Ford, E. W., Pasadena, Calif.....	188
—Steinbach	88	—Fitting up the porch	229	Forestry school, an American.....	71
Beds, portable.....	224	—Furnishing a boy's room	398	Fountains:	
Bigelow, Prescott, Manchester, Mass.....	236	—Furnishing a girl's room	420	—Brice	258
Billiard-Rooms:		—The arrangement and hanging of pictures	309	—Brown	299
—Steinbach	86	—The combination of wall-paper and window curtains	198	—Canfield	104
Bisland, Mrs. P. E., Bronxville, N. Y.....	279-324	—The treatment of fireplaces and mantels	463	—Guggenheim	256
Boats, motor.....	228	—Window curtains	132	—Mackay	256
Boice, Harry H., Wilmette, Ill.....	246	Decoration of the home, interior.....	112	—Pyle	255
Bond, Charles H., Swampscott, Mass.....	351	Dens:		—Pyne	257
Brandon, John R., Upper Montclair, N. J..	20	—Bigelow	237	—Shiffman	103
Brick Houses:		—Cassatt	286	—Squire	258
—Cootey	343	Dessert, flowers as.....	314	Fountains, vegetable.....	331
—Douglas	5	Deveres, Mary, Pasadena, Calif.....	188	"Fouracre," A. J. Cassatt, Bar Harbor, Me.	284
—Holt	74	Dibble, Frederick A.....	22	"Fox Hill Lodge," Prescott Bigelow, Manchester, Mass.....	236
—Pickler	342	Dietrichson, M., Pasadena, Calif.....	188	Frick, Henry C., Pride's Crossing, Mass..	313
Briggs, A. M., Kenilworth, Ill.....	355	Dining-Rooms:		Frontispieces:	
Brown, Mrs. John Nicholas, Newport, R. I.	295	—Abbott	361	—A good place for rock plants	122
Buck, Lawrence, Rogers Park, Ill.....	127	—Bailey	433	—A walk in the garden	42
Buhlert, J. W., Wenham, Mass.....	262	—Barber	170	—Among the foothills of the Canadian Rockies	454
Bulb growing on sponges.....	249	—Bartlett	151	—An imposing entrance	82
Bulbs to plant in autumn.....	409	—Bond	353	—Entrance porch	2
Bull, Charles R., Kenilworth, Ill.....	247	—Brown	298	—Pool and steps to the rose terrace.....	374
Bungalows, some California.....	92-185	—Buck	129	—Statuary in a pool.....	254
Burnham, H. C., Kenilworth, Ill.....	244	—Buhlert	263	—The court at Harbour Court.....	294
Butterflies, a new sense organ of.....	394	—Cassatt	286	—The split rail fence.....	334
		—Cootey	344	—The terrace and garden at the front of the house	214
California bungalows costing from one thousand dollars upwards.....	92	—Craig	54	—The terrace in front of the house.....	162
California bungalows, some.....	185	—Culver	219	—Trout fishing.....	414
Canahan, C. C., Wilmette, Ill.....	443	—Douglas	9	Furnishing, ideas for colonial.....	171
Carr, Herbert, Pasadena, Calif.....	92	—Goodwin	61	Furnishing the Flat:	
Cassatt, A. J., Bar Harbor, Me.....	284	—Harrington	419	—The bedroom.....	145
Cattle, short horned.....	234	—Henry	458	—The dining-room.....	89
Cement in the building of the suburban house and garage, the use of.....	201	—Hollander	427	—The drawing-room.....	77
Cherry, the double flowering.....	160	—Norris	115	—The hall.....	29
Chimney pots, some novel French.....	315	—Perkins	393	Furniture	225
City of the Sun, the	447	—Pope	48	Furniture for the Home:	
Clifford, E. L. Wilmette, Ill.....	111	—Rhoades	27	—Garden furniture	317
Clocks, and their makers, old time.....	62	—Robeson	427		
Colonial Furnishing, ideas for.....	171	—Rowles	109		
		—Schmedtgen	66		
		—Schultz	38		

—Gothic furniture	136	—Home-built garden seats and pergolas..	174	House of Mrs. C. E. Perkins, Westwood,	
—Porch furniture for the home	259	—Home-made concrete flower urns.....	220	Mass.	390
Furnishing the dining-room.....	89	—Home-made pottery.....	428	House of Harry A. Peters, Glencoe, Ill.	325
Gainsley, G. C., Alhambra, Calif.....	188	—Imitation marble.....	323	House of E. C. Pickler, Minneapolis, Minn.	342
Garages:		—Leather craftwork	474	House of A. A. Pope, Farmington, Conn.	45
—Bartlett	312	—Making plumes out of crepe paper.....	322	House of Miss Ranney, Pasadena, Calif.	94
—Conant	205	—Methods of beautifying the common gas		House of L. F. Rhoades, Nutley, N. J.	26
—Frick	313	light	321	House of Mrs. F. Robeson, Brookline, Mass.	427
—Hartford	206	—Post and board fence concrete.....	347	House of Mr. Rockwood, Oak Park, Ill.	202
—Hogue	312	—Sun-dials made at home.....	395	House of John A. Rogers, Wilmette, Ill.	130
—Howard	206	—The art of fireless cooking.....	265	House of W. D. Rowles, Montclair, N. J.	108
—Johnson	315	"Harbour Court," Mrs. John Nicholas		House of W. Stanton, San Bernardino,	
—Martin	206	Brown, Newport, R. I.	295	Calif.	93
—McKee	313	Harrington, Dr. F. B., Ipswich, Mass.	415	House of W. Schmedtgen, Wilmette, Ill.	66
—Perkins	393	Hartford, Mr., Asbury Park, N. J.	206	House of H. W. Schultz, Kenilworth, Ill.	36
—Schuman	313	Heating, open air orchard.....	117	House of C. E. Simmons, Oak Park, Ill.	355
—Scoville	312	Hedges, fences, walls and.....	335	House of Robert S. Smith, Kenilworth, Ill.	129
Garage, a house and a	484	Hedges, ornamental bedding plants for....	291	House of Walter C. Smith, Bronxville, N. Y.	279
Garages, portable.....	226	Heliotrope as a bedding plant, the.....	330	House and garden of W. S. Spaulding,	
Gardens:		Henry, Howard, Camp Hill, Pa.	455	Pride's Crossing, Mass.	375
—Abbott	360	Herrick, Walter, Oak Park, Ill.	354	House of E. C. Stanwood, Kennebunkport,	
—Baily	431	"Hill Stead," the estate of Alfred A. Pope,		Me.	134
—Bond	352	Farmington, Conn.	45	House of E. B. Stearns, Brookline, Mass.	426
—Culver	217	Hinckley, G. S., Pasadena, Calif.	93	House of A. C. Steinbach, Asbury Park,	
—Douglas	7	Hints for the household.....	80	N. J.	83
—Pope	46	Historic mansions of the Rappahannock		House of Mrs. B. I. Strickland, Los Angeles,	
—Spaulding	377	River, "Kenmore".....	99	Calif.	188
Garden, a wanderer's.....	211	Hogue, R. M., Philadelphia, Pa.	312	House of W. F. Struthers	481
Garden Competition:		Hollander, T. P., Misery Island, Mass.	426	House of L. K. Thompson, Minneapolis,	
—Second prize garden, Charles D. Davies	14	Holt, Robert, Summit, N. J.	74	Minn.	341
—Third prize garden, Anthony P. Finder.	56	Home-made perfumery.....	251	House of Frank H. Tichenor, Wilmette, Ill.	65
—Fourth prize garden, Mrs. A. H. Condict	95	Homes in Minneapolis.....	338	House of E. D. Tyler, Pasadena, Calif.	188
—Fifth prize garden, Edward Payson	176	Homes of four architects in the middle west	127	House of C. Van Duesen, Kenilworth, Ill.	245
—Honorably mentioned garden, Mrs.		House of G. St. L. Abbott, Concord, Mass.	359	House of Bert Wallace, Oak Park, Ill.	355
James R. Mellen	239	House of J. F. Atwood, Minneapolis, Minn.	338	House of Timothy Walsh, Pasadena, Calif.	164
—First prize garden, Dr. Shiro Miyaki..	486	House of A. H. Aylesworth, Wilmette, Ill.	325	House of Vernon S. Watson, Oak Park, Ill.	131
—Second prize garden, James M. Hull..	490	House of R. S. Baker, Wilmette, Ill.	67	House of H. Welz, Los Angeles, Calif.	188
—Third prize garden, M. F. Ault.....	491	House of William L. Bailey, Ardmore, Pa.	431	House of W. H. Wood, New Rochelle, N. Y.	445
Garden fountain, the.....	255	House of J. A. Bangle, Pasadena, Calif.	188	House of Clara B. Woolens, Wilmette, Ill.	167
Garden mazes, English.....	423	House of George Barber, Englewood, N. J.	169	House of A. M. Worthington, Kalamazoo,	
Gardens of California, water.....	103	House of S. L. Bartlett, Chestnut Hill,		Mich.	482
Garden Notes:		Mass.	149	House of Mrs. C. Wyman, Kenilworth, Ill.	354
—Autumn work in the garden	369	House of A. Baxter, Park Ridge, Ill.	201	House of Miss Young, South Pasadena,	
—Bedding with evergreens	367	House of Ida Pauline Bear, Pasadena, Calif.	188	Calif.	185
—Bog-gardens	289	House of Mr. P. Bigelow, Manchester,		House and a garage, a	484
—Fifteen good lilies	116	Mass.	235	House costing \$2,150	480
—Lawn-making	207	House of Mrs. P. E. Bisland, Bronxville,		House costing \$2,400	481
—Liming soil	289	N. Y.	279	House costing \$3,200	482
—Old cemeteries	329	House of Harry H. Boice, Wilmette, Ill.	246	Houses costing from seven to eight thous-	
—Planting of the formal garden	406	House of C. H. Bond, Swampscott, Mass.	351	and dollars, some eastern.....	18
—Sea-shore planting	248	House of John R. Brandon, Upper Mont-		Houses at Crystal Brook.....	304
—Tennis courts	448	clair, N. J.	20	Houses at Meadowdale, Bronxville, N. Y.	278
—The garden competition	485	House of A. M. Briggs, Kenilworth, Ill.	355	Houses costing from \$1,800 upwards.....	472
—Window Boxes	153	House of Mrs. J. N. Brown, Newport, R. I.	295	Houses from the Atlantic to the Pacific,	
Garden pests.....	252	House of Lawrence Buck, Rogers Park, Ill.	127	Modern	163
Garden, planning the small.....	208	House of J. W. Buhlert, Wenham, Mass.	262	Houses, portable.....	223
Garden, the home vegetable.....	159	House of Charles R. Bull, Kenilworth, Ill.	247	Houses, some small.....	243
Garden, the rose.....	7	House of H. C. Burnham, Kenilworth, Ill.	244	Houses, some western	65
Garden work about the home.....	120	House of C. C. Canahan, Wilmette, Ill.	443	Houses, the artistic treatment of fireproof.	401
Gardens, rock.....	123	House of Herbert Carr, Pasadena, Calif.	92	House, the modern.....	324
Garrett, J. A., Bronxville, N. Y.	110	House of A. J. Cassatt, Bar Harbor, Me.	284	Household, hints for the.....	80
Gateways:		House of E. L. Clifford, Wilmette, Ill.	111	Hydrangea, the.....	371
—Henry	459	House of F. P. Craig, Short Hills, N. J.	54	"Indian Ridge, the summer home of Dr.	
Glass espalier walls.....	452	House of J. N. Crampton, Wilmette, Ill.	324	F. B. Harrington, Ipswich, Mass.	415
Gobelin tapestry works, the.....	142	House of T. E. Cootey, Minneapolis, Minn.	343	Interior decoration of the home.....	112
Godfrey, Aaron, Upper Montclair, N. J.	20	House of William Spencer Crosby, Glencoe,		Isaman, L., Pasadena, Calif.	188
Goodwin, H. A., Marblehead, Mass.	59	Ill.	442	Japanese persimmon, the.....	13
Grafting	153	House of C. J. Cross.....	68	Johnson, A. B., Rosemont, Pa.	313
Grape-fruit grove in Florida, a protected....	158	House of Frederick Culver, Hadlyne, Conn.	215	"Kenmore," the home of Betty Washington.	99
Green house heating, conservatory and....	450	House of Miss Mary Deveres, Pasadena,		Kerr, W. W., Wilmette, Ill.	204
Group of modern houses costing from		Calif.	188	Kitchen of to-day, the small.....	193
\$1,800 upwards	472	House of M. Dietrichson, Pasadena, Calif.	188	Lemkau, J. H. Walter, Upper Montclair,	
Halls:		House of Rev. G. W. Douglas, Tuxedo,		N. J.	18
—Abbott	362	N. Y.	5	Libraries:	
—Baily	432	House of Edwin H. Ehrman, Oak Park, Ill.	244	—Brown	297
—Baker	67	House of E. W. Ford, Pasadena, Calif.	188	—Douglas	8
—Bartlett	152	House of G. C. Gainsley, Alhambra, Calif.	188	—Pope	48
—Bond	353	House of J. A. Garrett, Bronxville, N. Y.	110	Lily of the Valley may be grown at any	
—Brown	297	House of A. Godfrey, Upper Montclair, N. J.	20	time of the year, How the.....	32
—Cassatt	284	House of H. A. Goodwin, Marblehead, Mass.	59	Living-Rooms:	
—Craig	54	House of F. B. Harrington, Ipswich, Mass.	415	—Abbott	363
—Culver	218	House of Howard Henry, Camp Hill, Pa.	455	—Baily	434
—Douglas	10	House of Walter Herrick, Oak Park, Ill.	354	—Barber	170
—Henry	458	House of G. S. Hinckley, Pasadena, Calif.	93	—Bigelow	237
—Holt	76	House of T. P. Hollander, Misery Island,		—Buck	129
—Perkins	392	Mass.	426	—Buhlert	262
—Pope	47	House of Robert Holt, Summit, N. J.	74	—Cassatt	285
—Robeson	436	House of L. Isaman, Pasadena, Calif.	188	—Cootey	343
—Rowles	109	House of W. W. Kerr, Wilmette, Ill.	204	—Craig	55
—Schmedtgen	66	House of J. H. W. Lemkau, Upper Mont-		—Culver	218
—Schultz	38	clair, N. J.	18	—Goodwin	60
—Spaulding	379	House of A. H. Loomis, Upper Montclair,		—Harrington	418
—Stanwood	135	N. J.	22	—Hollander	426
—Walsh	165	House of Rhoda B. Long, Minneapolis,		—Long	166
Hall, the entrance.....	362	Minn.	166	—Rhoades	27
Half-Timbered Houses:		House of Whiting P. Lovell, Oak Park, Ill.	354	—Rowles	109
—Atwood	338	House of E. J. Lucas, Sound Beach, Conn.	40	—Schultz	38
—Godfrey	20	House of E. Lucas, Mount Vernon, N. Y.	243	—Stanwood	135
—Smith	129	House of Miss Cora Luce, Pasadena, Calif.	188	—Stearns	426
Handicraftsman:		House of F. H. Madden, Wilmette, Ill.	67	—Steinbach	87
—A combined grandfather-clock and book-		House of Edward Middleton, Oak Park, Ill.	355	—Tichenor	65
case	148	House of Charles M. Mock, Kenilworth, Ill.	354	—Walsh	165
—An amateur's birdhouse.....	264	House of Dana Morrill, Washington, D. C.	480	Living-room, the out-of-door.....	181
—Cabinet making as a handicraft.....	345	House of T. G. Nester, Pasadena, Calif.	185	Lodge, the summer.....	222
—Concrete copings for garden walks.....	221	House of A. F. Norris, Montclair, N. J.	114	Loggia, the.....	378
—Crafts that children can do	474	House of F. L. Orr, Pasadena, Calif.	185	Long, Miss Rhoda B., Minneapolis, Minn.	166
—Glue for model making.....	429	House of John L. Parrish, Upper Mont-		Loomis, Archery H., Upper Montclair, N. J.	22

Lovell, Whiting P., Oak Park, Ill.....	354	—Henry	456	—Lemkau	19
"Low Gables," E. J. Lucas, Sound Beach, Conn.	40	—Steinbach	85	—Loomis	22
Lucas, Edward, Mount Vernon, N. Y.....	243	Portable beds	224	—Long	166
Lucas, E. J., Sound Beach, Conn.....	40	Portable garages.....	226	—Parrish	21
Luce, Miss Cora, Pasadena, Calif.....	188	Portable houses.....	223	—Schultz	36
Madden, F. H., Wilmette, Ill.....	67	Potatoes, a novel method of growing.....	156	—Steinbach	83
Mansions of the Rappahannock River, his- toric "Kenmore".....	99	Potter, her home and studio, an American..	364	—Tichenor	65
Marine Mosaic.....	23	Pottery making for the amateur.....	189	—Wood	445
Martin, Mrs. E. L., Oak Park, Ill.....	206	Porticos:		—Woolens	167
Mazes, English garden.....	423	—Baily	432	Stucco houses of distinction.....	442
McKee, W. L., Bristol, R. I.....	313	—Bartlett	149	Stucco houses, costing from two thousand dollars upward.....	140
Metals, new process for Damascening, in- laying and blending metals.....	11	Problems in home furnishings.....	120	Suburban house in the mission style, a....	232
Middleton, Edward, Oak Park, Ill.....	355	Process for Damascening, inlaying and blending metals.....	11	Suburban windbreakers.....	408
Mirror, the.....	435	Protected grape-fruit grove in Florida....	158	Summer Houses:	
Mission house, a.....	232	Quebracho tree of South America, the....	28	—Pope	46
Mock, Charles M., Kenilworth, Ill.....	354	Radiator in France, the steam.....	430	Summer lodge, the.....	222
Modern houses from the Atlantic to the Pacific	163	Rag rugs, the revival of.....	52	Sun-Rooms:	
Monthly Comment:		Ranney, Miss, Pasadena, Calif.....	94	—Perkins	391
—A public improvement in the country..	44	Revival of rag rugs, the.....	52	Swannery, the world's largest.....	69
—The unusual house.....	4	Rhoades, L. F., Nutley, N. J.....	26	Tapestry works, the Gobelin.....	142
Morrill, Dana, Washington, D. C.....	480	Robeson, Mrs. Frances, Brookline, Mass....	427	Terraces:	
Morning-Rooms:		Robineau, Adelaide Alsop.....	364	—Brown	296
—Bartlett	151	Rock gardens.....	123	—Douglas	6
—Perkins	391	Rockwood, Mr., Oak Park, Ill.....	202	—Gillespie	106
Mosaic, Marine.....	23	Rogers, John A., Wilmette, Ill.....	130	—Spaulding	375
Motor boats.....	228	Rowles, Walter D., Montclair, N. J.....	108	"The Rice Field," Mrs. Charles E. Perkins, Westwood, Mass.....	390
Nester, Thomas G., Pasadena, Calif.....	185	Rugs, the revival of rag.....	52	Thompson, L. K., Minneapolis, Minn.....	341
Norris, A. F., Montclair, N. J.....	114	Schmedtgem, William, Wilmette, Ill.....	66	Tichenor, Frank H., Wilmette, Ill.....	65
Novel method of growing potatoes, a.....	156	School, an American forestry.....	71	Timing the rapidity of the leading traveling bean shoot.....	290
Old South Salem	466	Schultz, Henry W., Kenilworth, Ill.....	36	Topiary art.....	387
Old time clocks and their makers.....	62	Schuman, E. A., Mount Airy, Pa.....	313	Trees and shrubs to avoid in general plant- ing	212
Orange peeling, the art of ornamental....	461	Scoville, Robert, Chappinville, Conn.....	312	Trees, trimming street and lawn	107
Orchard heating, open air.....	117	Shingle Houses:		Trimming street and lawn trees.....	107
Ornamental bedding plants for hedges.....	291	—Culver	215	Trout, Yama-no-Uchi and its.....	271
Orr, F. L., Pasadena, Calif.....	185	—Lucas	40	Tuberculosis cows, the danger of the use of milk from.....	356
Ostrich farming as an industry	478	—Morrill	480	Tyler, E. D., Pasadena, Calif.....	188
Out-of-Door living-room, the.....	181	—Rhoades	27	Van Duesen, Charles, Kenilworth, Ill.....	245
Painting concrete houses.....	39	—Rowles	108	Vegetation, the effect of colored light on..	154
Palissy, Bernard, the famous French potter, and his works.....	302	Short horned cattle.....	234	Vegetable fountains.....	331
Parrish, John L., Upper Montclair, N. J....	21	Shrubs to avoid in general planting, trees and	212	Vegetable garden, the home.....	159
Patio, the.....	106	Simmons, C. E., Oak Park, Ill.....	355	Villa, with a California background, a Pompeian	382
Patios:		Small country house, the	480	Wall papers.....	112
—Borden	106	Smith, Robert S., Kenilworth, Ill.....	129	Wallace, Bert, Oak Park, Ill.....	355
Pergolas:		South Salem, Old	466	Walls and hedges, fences.....	335
—Bond	351	Spaulding, W. S., Pride's Crossing, Mass..	375	Walsh, Timothy, Pasadena, Calif.....	164
—Gillespie	105	Sponges, bulb growing on.....	249	Wanderer's garden, a.....	211
Perfumery, home-made.....	251	Stables:		Wasp's year, the.....	438
Perkins, Mrs. Charles E., Westwood, Mass..	390	—Brown	301	Watches in the world, the finest collection of antique.....	275
Persimmon, the Japanese.....	13	—Cassatt	287	Water gardens of California.....	103
Peters, Harry A., Glencoe, Ill.....	325	—Holt	76	Watson, Vernon S., Oak Park, Ill.....	131
Pickler, Dr. E. C., Minneapolis, Minn.....	342	—Perkins	393	Wax work, artistic	470
Planning the small garden.....	208	Stairways:		Welz, H., Los Angeles, Calif.....	188
Pompeian villa with a California background	382	—Douglas	8	Western homes costing from three to five thousand dollars.....	65
Pools:		—Harrington	418	Windbreakers, suburban	408
—Gillespie	106	—Perkins	392	Winter diseases of house plants.....	144
—Gould	256	Stanton, William, San Bernardino, Calif....	93	Wood, William H., New Rochelle, N. Y....	445
—Pyle	256	Stanwood, E. C., Kennebunkport, Me.....	134	Woolens, Clara B., Wilmette, Ill.....	167
—Shiffman	103	Stearns, E. B., Brookline, Mass.....	426	Worthington, A. M., Kalamazoo, Mich....	482
Pope, Alfred A., Farmington, Conn.....	45	Steinbach, Arthur C., Asbury Park, N. J....	83	Wyman, Mrs. Charlotte, Kenilworth, Ill....	354
Porches:		Strickland, Mrs. B. I., Los Angeles, Calif..	188	"Yama-no-Uchi" and its trout.....	271
—Abbott	360	Stucco Houses:		Young, Miss, South Pasadena, Calif.....	185
—Baker	67	—Baker	67		
—Craig	54	—Brandon	20		
—Harrington	417	—Buck	128		
		—Burnham	244		
		—Canahan	444		
		—Crosby	442		
		—Dibble	22		





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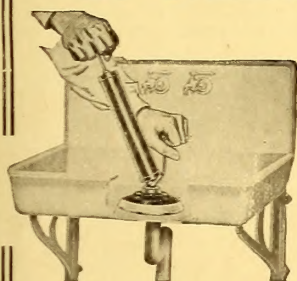
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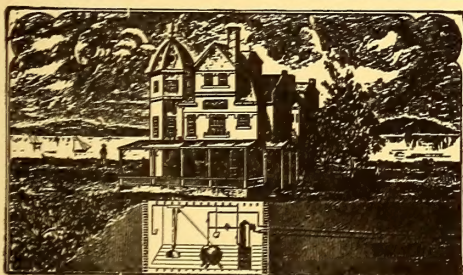
Little Giant Household Pump, which is guaranteed to remove the most obstinate obstructions from and thoroughly clean all pipes leading from Kitchen Sinks, Wash Basins, Bath Tubs, Lavatories, Refrigerators, Hotel and Saloon Wash Boxes, Soda Fountains, etc.

No skill at all required.—You just place pump over opening of pipe and work piston up and down as you would a bicycle pump, and pipe is free in a jiffy. **No bucket or hose or any other tool required.**—The Little Giant is made of polished brass, with attachments of pure rubber, and will last a lifetime.

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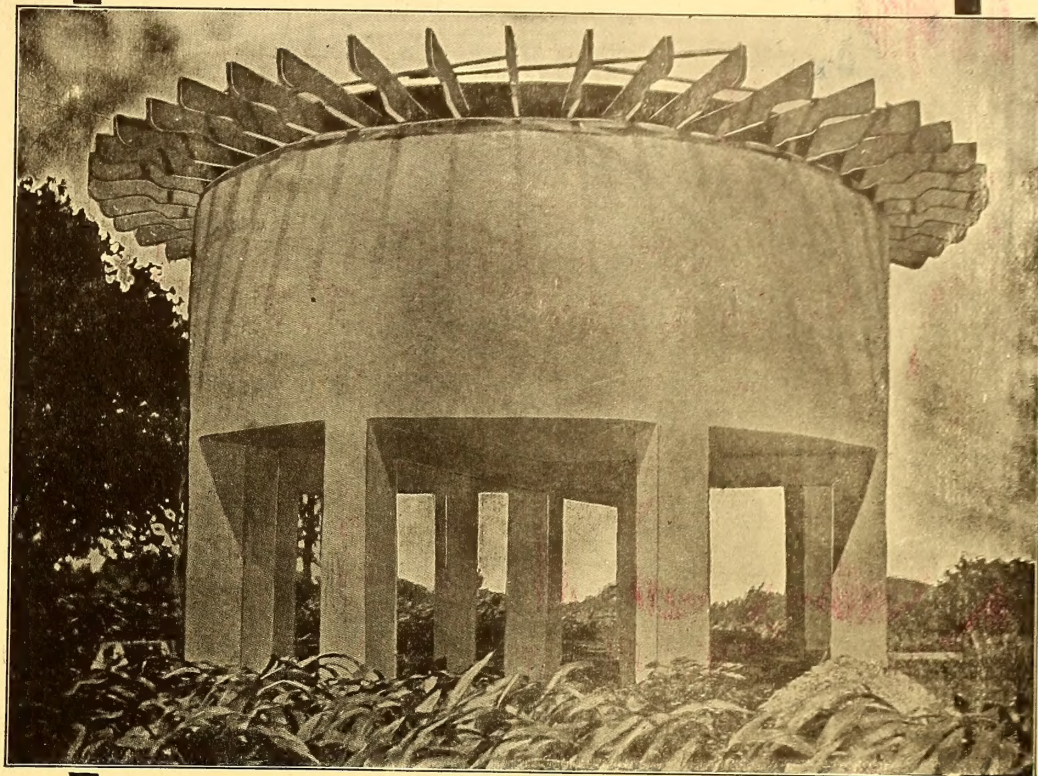
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San Francisco: L. A. Norris, 835 Monadnock Bldg.

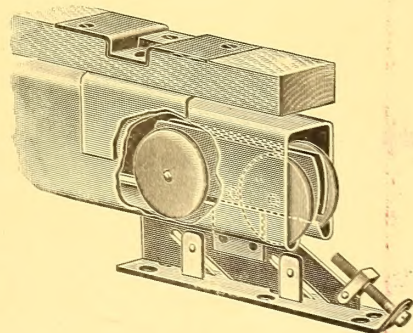
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